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The growing baby's eager appetite for soups, vegetables and cereals

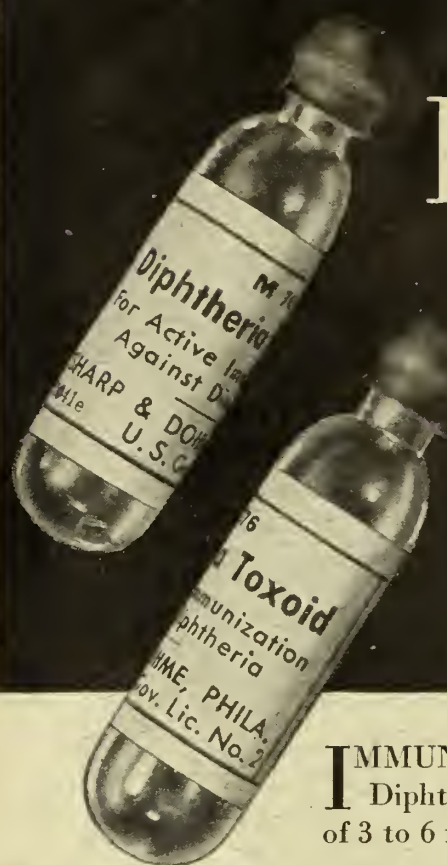


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THE CURABILITY OF CANCER OF THE RIGHT COLON*

By
FRED W. RANKIN, M. D.
Lexington, Ky.

Cancer is the most common lesion of the large bowel for which surgery is instituted. Whether or not it is increasing is a moot question, but in the period between 1920 and 1929 cancer statistics on cancer of the intestinal tract showed the most prominent increase of all deaths from cancer in this country. Including the rectum, cancer of the large bowel increased from 7.1 per cent to 9.4 per cent in each one hundred thousand inhabitants during this period. Similarly one sees in statistical data in both England and Wales that carcinoma increased from 6.8 per cent to 13.6 per cent in each one hundred thousand inhabitants for the same decade.

I would arbitrarily divide the colon into right and left halves and consider the two segments as practically different organs. Perhaps one might better say that the colon is a dual organ—the right half the functional half, the left half the storehouse. Such a division, if you consider the right half of the colon to extend to the middle of the transverse segment and the left half to begin there, is actually an embryological division, since the right half of the colon develops with the small bowel from the midgut and the left half from the hindgut. These developmental and functional differences account for the vast diversity in symptomatology and have a direct influence on the prognosis.

It is a happy circumstance that the prognosis in colonic cancer is better than that of

removable cancer elsewhere in the gastrointestinal tract, and this I hope to emphasize by a statistical study of a group of cases I intend to present to you.

The frequent occurrence of cancer in the right colon is noticeably smaller than its fellow of the opposite side, the incidence being about one-half of that of the sigmoidal segment alone.

SYMPTOMATOLOGY

Symptomatology of cancer of the right half of the colon revolves around functional disorders, as one would expect, because 90 per cent of the fluid content of the large bowel is taken up in this segment. Developmentally the right colon has its origin in common with the small bowel from the midgut, and symptomatologically the lesions which are located in this segment differ most materially from those of the left half. The cancers of the right half are usually large, flat, situated more or less laterally, and do not tend to produce obstruction: a marked contrast to the encircling growths located in the opposite arm of the colon.

Two other factors which influence against stenosis are the liquid contents of the bowel as it empties from the small gut, and the larger caliber and greater elasticity of the right colon.

There are three main groups of clinical symptoms into which most cancers of the right colon fall. First, the so-called dyspeptic group. Here indigestion is mild in character with few localized symptoms and is frequently diagnosed and operated on as chronic appendicitis or chronic cholecystitis. Second, the anemic group in which profound loss of weight and strength accompanies anemia without visible loss of

*Read to the Association in annual session, Montgomery, April 20, 1933.

blood. Third, the accidentally discovered group.

Group one represents a high percentage of latent cancer of the right colon which might be better diagnosed prior to exploration if more routine radiologic examinations were urged. It is through this examination that the first symptoms of this particular group are frequently solved. They may be no more than a mild bowel irregularity with scarcely noticeable alternating periods of diarrhea and constipation. Pain and local tenderness simulating subacute or chronic appendicitis, but without a tendency to disappear, occasionally usher in lesions of this type. About ten per cent of cancers of the cecum in my experience are operated upon for chronic appendicitis or chronic cholecystitis within the period of their symptoms: a striking parallel to the similar percentage of carcinomas of the rectum which are operated upon for hemorrhoids.

The second or anemic group is the most interesting one as well as the most frequently encountered. It is characterized by anemia, weakness, and loss of weight with concomitant decrease in the entire blood picture, yet without loss of blood. The patient may first notice an inability to carry on his work, or an unexperienced weakness which calls his attention to the anemia. Just why this particular type of anemia occurs is not entirely satisfactorily explained, but it is probably due to a direct and slow loss of blood, although there is a tendency on the part of many observers to attribute it to some perverted function of the mucous membrane which impairs it to such an extent that absorption of toxins from broad infected surfaces of the growth occurs. A secondary anemia of such intensity as to cause the hemoglobin to drop to 30 per cent and the number of red blood cells to decrease to two million five hundred thousand per cubic millimeter over a period of a few months or more is so frequently associated with cancer of the right colon that its presence should be suggestive enough to demand a radiologic examination of this segment. The differential diagnosis between carcinoma of the stomach and pernicious anemia is so greatly emphasized in most gastro-intestinal text-books that one readily undertakes the necessary examina-

tions when confronted with a pronounced anemia of an uncertain cause, but it is my opinion that much more frequently this change in the blood picture is the result of malignancy of the right colon than of the stomach. Pernicious anemia does not actually resemble secondary anemia of either bowel or stomach, but the distinction between pernicious anemia must always be made. Fortunately patients with carcinoma of the right colon can likewise have marked anemia and not necessarily be excluded from operative intervention. I have frequently removed growths of the right colon in the face of a hemoglobin drop to 30 per cent with satisfactory end results, yet one would hesitate to attack carcinoma of the stomach with a similar blood picture. The amount of ulceration present in cancer of the right colon influences markedly the clinical symptoms. The anemia and weakness are in direct proportion to the size of the neoplasm and the degree of ulceration and secondary infection present.

The third group of accidentally discovered tumors of the right colon accounts for about ten per cent of the whole. Obviously this group offers the best prognosis because of the earlier stage at which the symptoms appear. The discovery is made usually either by a routine physical examination or accidentally by the individual himself or herself.

The great advance in diagnostic accuracy in the recognition of lesions of the entire colon at the hands of a radiologist should, if pursued persistently, bring these individuals to operation at a great deal earlier stage than heretofore. I would emphasize that the introduction of barium medium in seeking to localize a lesion should be substituted by opaque enemas. It is my conviction that barium by mouth for diagnosis of organic lesions of the colon is not only useless but frequently dangerous. I have had the unpleasant experience of seeing acute intestinal obstruction produced by small amounts of barium given by mouth in the presence of a stenosis of the colon due to carcinoma. The barium introduced into the empty colon and visualized by fluoroscopy with the assistance of manual manipulation gives as high a percentage in accurate diagnosis as similar methods given in an examination of the stomach.

TREATMENT

Surgical extirpation of cancer of the right colon is undeniably the most satisfactory treatment. That few, or if any, of the growths in the right colon present the obstructing phenomenon so common to cancer of the opposite side makes it less imperative that they be operated upon without careful preliminary preoperative measures and attention to factors of safety being indulged in.

My own experience has been that segregation of patients with lesions of the colon and rectum under the combined care of clinician and surgeon has been distinctly advantageous to both for the institution of preoperative and postoperative measures.

The two principles which preoperative measures aim at are: first, decompression of the colon, and second, rehabilitation of the patient. Medical decompression of the colon is possible in the vast majority of instances where acute obstruction has not supervened; and, since obstruction is not the prominent factor in right colonic growths, usually one may after 3 or 4 days of preliminary lavage find at exploration an entirely flat bowel. Decompression is accomplished by multiple and frequent irrigations with warm saline solution and is supplemented by mild purgations. This maneuver reduces intracolonic pressure and at the same time has a tendency to cause a recession of the inflammatory reactions around the growth. While these measures are being introduced, rehabilitation is being carried forward by forcing fluids by mouth and, frequently, blood transfusions, together with a diet high in calories and low in residue. An additional factor I mention which has an advantage in our experience is the introduction of intraperitoneal vaccination with a vaccine of colon bacilli and streptococci derived from patients who have succumbed to peritonitis. Bargaen and I introduced this vaccine as a routine measure a number of years ago at the Mayo Clinic, and in our experience in more than a thousand cases we have amply confirmed our belief that it is a safety factor of considerable importance. Let me emphasize, however, that it is but one of a sequence of events in the preparation of the individual and alone it would probably have small beneficial influence.

To select the optimum time of operation one must calculate with rehabilitation when it has reached its maximum and when decompression has restored the colon as nearly to a normal physiologic state as is possible in the presence of a neoplasm.

The principle of graded operations, in the vast majority of instances where the individuals are anemic, dehydrated, and far below the physiologic status, is of the greatest importance. It is my feeling that the best type of operation for the largest percentage of cases of right colonic cancer is a two-stage maneuver. The first stage consists of an aseptic ileocolostomy between the terminal ileum and middle of the transverse colon; and a second stage resection three to six weeks later. I would not urge that every case be subjected to a double operation, for occasionally one finds an early case a good risk where resection and anastomosis may be carried out at a single stage. However, if such a decision is arrived at, I believe a supplementary ileostomy proximal to the anastomosis is a most essential measure of decompression. In my hands this type of procedure has proven most useful. In operations on sixty cancers of the right colon in which aseptic ileocolostomy was done over my clamp there were four deaths, or a mortality rate of 6.6 per cent. Of the casualties, one was an elderly individual over eighty who died of bilateral pneumonia, proven at autopsy; a second case died of pneumonia; a third case died of peritonitis without evidence of leakage at the suture line; and the fourth case was a patient in whom metastasis was found throughout the abdomen with marked involvement of the liver—because of obstruction a palliative ileostomy was done. Postmortem examination showed hepatic insufficiency and there was no evidence of peritonitis, obstruction, cardiorenal pathology, or pulmonary complications. With this method of anastomosis in my own series I have not seen a single hemorrhage, nor has there been a leakage at the suture line. Animal experimentation has proven likewise that there is no central constriction or diminution of the lumen of the bowel by this method. I do not hold too much brief for aseptic methods of anastomosis which are often complicated, but I do believe that any method which cuts down

gross contamination is desirable if it can be utilized satisfactorily by others than its originator.

Operative mortality figures are all subject to variations depending upon the experience and boldness of the operating surgeon and are of far less importance in my opinion than the standard of operability which one maintains. The ultimate end results in a group of patients operated upon successfully should be the aim of the surgeon rather than brilliant technical procedure accompanied with low mortality. It is axiomatic that one may operate upon a carefully selected series of these cases with a low primary mortality, but obviously the corollary follows that the operability will be equally low and many patients denied a chance of longevity who were considered advanced or border line cases.

In 1929 and 1930 I made a yearly report on the mortality rate of surgery of the colon and found that following anastomosis and resection of the right colon for all lesions the hospital death rate was approximately 8 per cent. There are three main lesions in this region for which surgery is usually done, namely: carcinoma, fecal fistula, and hyperplastic tuberculosis—and of these three 75 per cent were done for carcinoma. At the same time an operability range between 55 and 69 per cent was maintained. I believe that 10 per cent mortality with this operability is quite a justifiable hospital death rate for surgery of the colon and rectum, and to reduce it much below this at the present time when patients are first seen by the surgeon in a more or less advanced stage is to deny some individual his right by surgery.

PROGNOSIS

It has been stated frequently that successful extirpation of carcinoma of the right colon showed a better prognosis than that of any malignancy elsewhere in the gastro-intestinal tract. To this I heartily subscribe and add that carcinoma of the right colon successfully extirpated shows a better percentage of five-year cures than those of the rest of the large bowel and rectum.

In studying a group of 187 cases of cancer of the right colon successfully removed,

we found that, actually taking all grades of tumors, there were 57.6 per cent of five-year cures. This study further showed that a person with a cancer of the proximal colon has a ten per cent better chance of permanent cure when submitted to surgical intervention than does a person with cancer in the left half of the large bowel, and a twenty per cent better chance than he would have if his lesion were in the rectum.

There are many modifying influences which one must consider in any study of end results from cancer of the large bowel and rectum. The most important of these in my opinion is the pathologic grading of the growth. The Broder's method around which the grade of the malignancy revolves is the rapidity of the growth, gradual involvement, and the distinct metastasis. Thus we have been able to show that Grade I carcinoma gives about two and one-half times a better prognosis than does Grade IV carcinoma over a five-year period. Where glands are involved the reduction of prognosis is around 35 per cent. As for instance in Grade I with glands involved, we found 44 per cent of the cases lived five years, while without glandular involvement 69 per cent were five-year cures. And by the same analysis it was found that Grade I carcinoma with uninvolved glands showed four and one-half times better prognosis than does Grade IV with glands. It was interesting also to notice instances of glandular involvement which in this series were as follows: 27 per cent for Grade I; 35 per cent for Grade II; 50 per cent for Grade III; 56 per cent for Grade IV. These figures seem to indicate that the advanced invasion from the pathologic standpoint influences for good or bad the prognosis.

In addition to the intrinsic influences one must consider such modifying influences as the age of the patient, general disability, duration and direction of the growth, glandular metastasis, etc. To these considerations further might be added some local influences such as size and fixation, attachment to the fissura and perforation.

Considering that the operability of these cases is maintained at a high standard and that operative intervention is carried out with a reasonable death rate, it is gratifying to note that here surgery actually is of

more avail against malignancy than elsewhere in the gastro-intestinal tract.

To increase all efforts to focus attention on these growths at an earlier date obviously is of paramount importance, but it must be admitted with reluctance that so far all propaganda has shown little helpfulness in making the average individual "colon conscious". The very fact that these cases come for advice after the symptoms have been present on an average of ten or ten and one-half months makes this assertion more striking.

With increasing accuracy of diagnosis, lower hospital mortality, and unreduced operability, it is entirely possible that there may be still a further increase in the percentage of five-year cures of cancer of the right colon successfully removed.

CORONARY OCCLUSION*

J. HAROLD WATKINS, M. D.
Montgomery

INTRODUCTION

Sudden closure of the coronary circulation with myocardial infarction has only recently assumed an extraordinary and well deserved clinical importance. Since Herick's complete description of the syndrome in 1912, this condition has today become responsible for an alarming increase in the number of tragically sudden deaths. It strikes men down in the prime of life and in their years of greatest usefulness as has no heretofore-described human ailment.

Whether this dreadful malady is actually more prevalent now than it was in the past, or whether it is better understood and consequently more readily diagnosed, is not settled. The majority of cardiologists are agreed that coronary artery disease has shown an abrupt increase within the past ten years. Among the causes of death among physicians, coronary occlusion occupies a prominent place. Newspaper accounts of deaths due to "acute indigestion" are really deaths due to coronary occlusion.

Our knowledge concerning the specific etiologic factors provoking an acute occlu-

sion is quite limited. There are, however, certain so-called predisposing factors which have been more or less prominently mentioned as being related in some manner. It was formerly believed that the condition was limited almost entirely to those persons in the higher walks of life, but today on the charity wards coronary occlusion is by no means infrequent. The disease occurs most often after the fiftieth year of life and males are affected about twice as frequently as females. Worry, emotional stress, and mental strain are always prominent features in the history of any patient with coronary occlusion. Another seemingly important factor is heredity. It is well known that poor tubing runs in families and this fact was first mentioned by Osler. Diabetes and hypertensive heart disease have been shown to be definitely related to coronary disease. The roles played by alcohol, tobacco, syphilis, and rheumatism do not appear significant in the causation of this cardiovascular insult. Certain types of body habitus appear more prone to develop coronary occlusion. Levine and Brown describe the type susceptible to this condition as the well set person, somewhat overweight, often of considerable physical strength, who has enjoyed unusually good health.

SYMPTOMATOLOGY

Because the symptoms of acute closure vary, depending upon the size of the vessel occluded and its location, I shall describe in detail only the typical attack following occlusion of one of the main anterior branches.

The patient is usually a well nourished man past fifty years of age, apparently in good health, who may or may not have had previous attacks of mild dyspepsia. Such a patient, while at rest, is seized with dramatic suddenness. A pain, terrific in force and indescribably intense, unlike anything he has ever experienced before, is felt in the epigastrium or just behind the sternum. His face betrays a sense of impending death and a cold clammy sweat breaks out over the entire body. He becomes nauseated and vomits, particularly if he has just eaten. The extremities are cold and cyanotic. The heart sounds are feeble and muffled and the pulse is usually rapid and

*Read to the Association in annual session, Montgomery, April 19, 1933.

thready, but it may be slow or irregular. Marked dyspnea appears and numerous moist rales are heard over the bases of both lungs posteriorly. The blood pressure falls quickly and the whole picture becomes one of profound physical and mental shock. The patient is panic-stricken and, although restless, moves cautiously in an effort to attain a position which will lessen the almost unendurable pain.

Approximately one-half of the patients die during the attack; in those who survive, a slight fever, ranging from 100 to 102° F., makes its appearance, accompanied by a leukocytosis of 12,000 to 15,000. Later a friction rub, to-and-fro in nature, indicates a pericarditis over the infarcted area. This sign is present only when that surface of the myocardium near the anterior chest is infarcted and is pathognomonic.

The pain is variously described as a crushing weight in the epigastrium or a marked sensation of constriction behind the sternum, vise-like in character. The pain may radiate to the precordium, shoulder, neck, face or either extremity; but, as a rule, the radiation is not so marked as in the case of angina pectoris. Pain in any one of these areas alone may be the only site. The duration of the pain is usually much longer than in angina pectoris, lasting from several minutes to many hours and is not at all influenced by nitrites and barely by large doses of morphine.

It must be remembered that all patients with acute occlusion do not present such a typical picture. Particularly difficult to recognize are the cases with relatively mild and atypical manifestations. The pain, instead of being in the epigastrium or beneath the sternum, may be in the neck, region of the ear or in the elbow or wrist. I well remember that a member of my family had excruciating pain in the left wrist as the sole symptom for several weeks before the classical manifestations of coronary occlusion became apparent. This pain was so severe as to beggar description but was referred to as "like a heavy piece of timber across the forearm". Instead of pain the patient with coronary occlusion may have sudden and distressing dyspnea, with symptoms of collapse, a clammy sweat, nausea, ashy color and definite drop in blood pressure denoting a serious heart catastrophe.

In fact many writers regard the sudden dyspnea with the above described train of symptoms as being of a more ominous nature than pain.

One of the most constant findings in coronary occlusion is a marked fall in the blood pressure, systolic and diastolic, but particularly the systolic level. The pressure may or may not have been elevated before the attack. Certainly it is not usually so high before the attack as in persons with angina pectoris. The systolic pressure may fall precipitately from 180 mm. to 80 mm. within a very few minutes. If this drop in pressure is not noted when coronary occlusion is suspected, the diagnosis must in every instance be questioned.

DIAGNOSIS

Because of the epigastric location of the pain, the nausea, vomiting, distention and occasional rigidity, this condition is not infrequently mistaken for an acute abdominal emergency such as ruptured gastric or duodenal ulcer, acute pancreatitis, gallbladder colic, and other disorders with pain referred to this region.

The most frequently confused condition is angina pectoris; but, if the patient has had anginal attacks before, he at once recognizes this pain as of an entirely different kind. His attacks of angina have been relieved by amyl nitrite or nitroglycerin, but this is not affected by these drugs at all. The attacks of angina pectoris are always the result of exertion, emotional stress or overeating, while this pain may strike without the slightest provocation while the patient is at complete mental and physical rest. The pain of angina pectoris usually radiates while the pain of coronary occlusion tends to remain localized. There is no fall of blood pressure, no fever, no circulatory collapse nor leukocytosis accompanying an attack of angina. The heart sounds in this syndrome are good.

Gallbladder colic closely simulates acute coronary closure in many instances. The pain is sudden, intense, located in or just to the right of the epigastrium and is occasionally referred to the sternal region and even down the arm. We seldom have the marked fall in blood pressure, the rapid feeble heart, or other signs of circulatory failure. These points may be employed to aid in

the differentiation of coronary occlusion from other abdominal catastrophes such as ruptured peptic ulcer, acute pancreatitis, and obstruction.

Extreme difficulty may be encountered in those patients who do not have pain but who develop sudden dyspnea instead, accompanied by other signs of cardiovascular weakness. Coronary occlusion should always be considered the probable cause in such instances.

If the attack is typical, and fortunately for us most of them are, there should be little difficulty in arriving at a diagnosis of coronary occlusion. We should suspect a sharp insult to the myocardium when a person past middle life develops an acute attack of pain in the epigastrium or behind the sternum, not affected by nitrites, accompanied by nausea, vomiting, and the signs of collapse of the cardiovascular apparatus. A rapid fall of blood pressure, perhaps a friction rub several hours later, and slight fever with leukocytosis make the picture quite definitely that of coronary occlusion. The use of the electrocardiograph is of great value as in most cases there are fairly definite changes in the record. However, these signs may not become manifest for several hours or days following the injury to the heart muscle. All persons suspected of having had an attack of coronary closure should by all means have the benefit of an electrocardiographic tracing.

PROGNOSIS

Although infarction of the heart muscle is without doubt the most serious cardiac catastrophe, it should be always borne in mind that it is practically impossible in any case to predict the course of events. Approximately one-half the patients die immediately. Some linger with profound shock and die after several hours or days. Still others recover sufficiently to carry on, but with heart efficiency seriously and irreparably diminished. We have no means to accurately determine the extent of the infarcted area. We perhaps do not know just what state the heart muscle was in prior to the attack. Therefore a guarded opinion is imperative. The severity of the pain itself is not of prognostic aid. Severe seizures with unendurable pain lasting for many hours have been overcome and recovery ap-

parent, while very mild pain, disappearing after a few minutes, has been followed by sudden death.

A prolonged circulatory collapse with a constantly lowered blood pressure warrants a grave prognosis. An extremely slow pulse usually denotes block, thereby lessening the chances for a favorable termination. Ectopic beats and auricular fibrillation do not seem to diminish the chances for recovery. The signs usually regarded as favorable are a gradually rising blood pressure, slowing of the pulse, and a betterment of the heart sounds. The duration of life after coronary occlusion has been variously stated as averaging from five to seven years. White recently reported a patient who had an attack seventeen years ago and lived until this year without pain or other symptoms referable to his heart, finally dying with cerebral hemorrhage. It must not be forgotten, however, that one attack usually is followed by a second and that the chances of recovery are much less.

TREATMENT

Emergency treatment is indicated in this condition as in few others if we expect to save the patient's life. The immediate indications are to relieve pain, combat the profound circulatory shock, afford adequate nutrition to the damaged heart muscle, and allay the marked apprehension and fear of impending death. Morphine should be given promptly, without fear, and in generous dosage. One-third to one-half grain should be administered as soon as possible and repeated as often as necessary. This tends to relieve or lessen the pain and dispel the profound apprehension. Morphine can be employed for several days at frequent intervals so long as it does not exert a toxic action upon the respiratory center. Later on, codeine or phenobarbital may serve to care for this symptom. Amyl nitrite and nitroglycerin, dramatically effective in relieving the pain of angina pectoris, are of no value and, because of an already lowered blood pressure with shock, should not be used. Recently we have been shown that oxygen is very successful in overcoming the pain of coronary occlusion and lessening the demand for large doses of morphine. It was formerly employed for the treatment of cyanosis and dyspnea but Rizer and Kil-

gore have reported excellent results following its use in an effort to diminish pain. The rationale of oxygen therapy is based upon the assumption that the pain of coronary occlusion is primarily due to deficient oxidation in the infarcted area.

The second urgent indication is to overcome the distressing cardiovascular shock. For this purpose warmth is supplied by means of electric pads, hot water bottles and blankets. The routine administration of strong cardiac stimulants is contraindicated in coronary occlusion in treating the shock. Here is a heart already greatly damaged and nature is endeavoring to give it as much rest as possible. Strong stimulation with strychnine, adrenalin, caffeine and camphor can do no good and ventricular fibrillation or rupture of the already weakened muscle is liable to occur, either of which is fatal. The fall of blood pressure is one of the manifestations of nature's effort to lessen the strain on an area suddenly weakened. Digitalis is mentioned only to be condemned in the treatment of an acute thrombotic occlusion. The heart muscle is made more irritable by digitalis and conduction of impulses is lessened by its use. This is not at all desirable in this condition. Therefore stimulation is to be avoided as a rule unless there are grave signs of congestive failure. If auricular fibrillation is present, quinidine may be used effectively. If this is not successful in overcoming this disturbance, digitalis may be cautiously employed. If block occurs, very small doses of adrenalin may be used. Because of the frequency and danger of ventricular fibrillation following an occlusion of the coronary circulation, Kilgore recommends the routine administration of quinidine, grs. III, three times daily, for a period of several weeks after an attack. Theobromine sodium salicylate is given with quinidine to increase the coronary circulation, particularly the collaterals. Nourishment must be given in adequate amounts in order to prevent an impoverishment of the heart muscle. When necessary, glucose may be given by hypodermoclysis or by slow intravenous injection.

After the acute attack has been overcome, the patient must be kept at absolute rest for not less than two months, regardless of how well he feels or how few signs

there are remaining of the attack. Healing of the infarcted area requires variable time and a sudden strain incident to walking or straining at stool may provoke disaster. Mental rest is equally important for these patients. Severe emotional strain should be avoided. The bowels should never be allowed to become sluggish, as many accidents during convalescence occur while the patient is straining at stool. A bland diet in small amounts to prevent distention should be given.

Therefore in summing up the treatment for acute closure of a coronary vessel, the following points are most important: (1) the early use of morphine in generous doses for the control of pain; (2) the routine administration of oxygen; (3) avoidance of digitalis and other cardiac stimulants unless grave complications arise demanding their use; (4) absolute physical and mental rest for a period of at least two months in bed, and (5) encouragement of the patient.

RHEUMATISM IN CHILDREN*

W. H. McCASLAN, M. D.
Union Springs

The widespread neglect of rheumatism in children and the casual manner in which it has heretofore been treated are the reasons which caused me to select this subject for discussion. When we study the general mortality rates and find heart diseases consistently leading the list, we should pause and ask the question "Why?" When we realize that from forty to sixty per cent of these cases can be traced to childhood rheumatic infections it should cause us, as physicians interested in the diseases of children, to attempt to learn more of the underlying cause of this condition. By studying the cause of childhood cardiac disease and attempting to remedy this cause, we have the opportunity of preventing an untold number of cases of cardiac invalids and of lowering the mortality from heart disease.

Rheumatic infection in childhood presents a vastly different picture from that of adult life. If we wish to really learn something of rheumatism in children, we must

*Read at a meeting of the Southeastern Division of the Association, Union Springs, July 27, 1932.

approach it with an unbiased mind and attempt to forget the condition known as rheumatism in the adult.

ETIOLOGY

The exact etiologic agent is still somewhat in doubt. However, Rosenow and others have isolated a streptococcus from infected joints and produced rheumatic manifestations in animals from a culture of it. It is now generally agreed that some form of streptococcus is the causative agent.

The oral and nasal cavities are the most important modes of entry of the primary rheumatic infection; the tonsils, however, are not as much to blame as was formerly thought.

Any cause, such as exposure to cold or wet weather, which tends to lower the child's resistance may act as a predisposing cause of the bacterial invasion. Previous disease of the tonsils, adenoids, teeth or nasal accessory sinuses increases the possibility of invasion by the specific organism. The disease is most commonly seen in undernourished children of the poorer classes, but it is not uncommon in children from the higher strata of life.

Heredity plays a very important part in many cases. While there is no direct transmission of the disease there is a decided tendency for it to appear in several generations, usually in an increasing ratio.

While cases have been reported in nursing infants, rheumatism is rare under five years of age. It is essentially a disease of school age; most commonly the first attacks occur between the ages of six and twelve. Girls are more susceptible than boys; and chorea is more common in females affected with rheumatic fever than in males.

Rheumatism occurs at all seasons, but it is most common in the spring. One attack strongly predisposes to further attacks, usually increasing in severity.

SYMPTOMATOLOGY

Rheumatic fever as seen in adults, with sudden onset, high fever, severe inflammation of successive joints and profuse, acid sweats, is rarely seen in children. The onset may be insidious, with very few, if any, manifestations of an acute infection. The indefinite pains may be ascribed to "grow-

ing pains"; such a case may go on until the parents have the child examined for shortness of breath, and then an active carditis, with a heart that is already somewhat enlarged, may be found. There is frequently a history of repeated attacks of tonsillitis or sore throat which may be followed by a low grade fever and indefinite pains, not always referred to the joints. (Let me say here that a very careful and minute questioning of the parents about the present and past history of the child and the family history is most important in the diagnosis of rheumatism in the child.) When the joints are involved there is seldom the redness, extreme tenderness and swelling as seen in the adult. There is much less tendency for the successive invasion of joints as seen in the adult; the knees and ankles, less often the wrists and elbows, are the sites of predilection. There may be no symptoms referable to the joints. Digestive symptoms not infrequently precede the onset of acute rheumatism; appendicitis or peritonitis may be suspected. The case may present itself as one of chorea with no rheumatic manifestations. Some cases show up as a primary carditis with no apparent rheumatic symptoms.

The fever usually ranges between 100° and 102° F. There is a corresponding increase in the pulse rate which drops with the fever. A persistently high pulse rate must always be regarded with suspicion, and, even with negative signs over the heart, it is indicative of some cardiac embarrassment and absolute rest must be insisted upon.

Nervous manifestations of various kinds may be present but they are not characteristic of the disease.

There is usually a very moderate leucocytosis. As the disease progresses an increasing secondary anemia is invariably present. The skin is pale and pasty and the child presents a picture of general lassitude.

Subcutaneous nodules of fibroplastic cells may be present in the scalp, over areas where the bones are near the surface, or over the tendon sheaths, especially the flexor tendons of the wrist. Successive crops appear, each nodule varying in size from a pin head to the size of a pea. The rheumatic infection may be considered active so long as the nodules are present, and for this

reason they are of importance from the standpoint of prognosis and treatment.

Various forms of skin eruptions may occur during the course of the disease, but none are characteristic. Erythema multiforme is frequently seen, and erythema nodosum is of fairly common occurrence.

Evidences of cardiac involvement usually occur about the end of the first week, but they may appear at the onset of the disease. Primary acute carditis in a child is most likely of rheumatic origin. The most important and the most serious manifestation of rheumatism is the cardiac involvement. Any form of carditis may be present. Cardiac injury is much more common in children than in adults, but a permanent lesion does not invariably follow involvement of the heart. However, there is a strong tendency to a recurrence of the rheumatic infection, and with each attack the heart shows a greater susceptibility to infection. Several attacks usually leave a permanently damaged heart. Early diagnosis of cardiac involvement is of utmost importance to the future welfare of the child. The extent of myocardial damage is a much more important factor in deciding the impairment of the child's health than is a murmur indicating a valvular lesion. There is no relation between the severity of the attack of rheumatism and the involvement of the heart.

Immobilization of the joints tends to hasten the recovery from the articular symptoms; in the same manner anything which lessens the work of the heart favorably influences the control of the cardiac inflammation. Slight irregularity of the heart sounds, a modified or changed character of the first sound, a reduplication of the second sound at the apex, a displacement of the apex beat, a persistently increased pulse rate, a vague sense of precordial discomfort—all may indicate early cardiac involvement. To be able to recognize these early signs and to know what to do when they are recognized are perhaps the most important things in the management of the disease.

In some cases the onset is abrupt with severe cardiac signs present; these cases may show a rapid dilatation of the heart with dyspnea, weak, rapid, irregular pulse; pallor, vomiting and delirium—and most often early death from syncope.

Acute pericarditis may occur alone or in conjunction with valvular disease. It is not so common as endocarditis, but it is more frequent in children than in adults; and it is the most frequent cause of death in the attack of acute rheumatism. It is apt to occur a week or two after the subsidence of the joint symptoms and fever. It is more common in males than in females. There is involvement of both layers of the pericardium and the typical to-and-fro rub at the base of the heart is often accompanied by severe precordial pain. The pericardial sac may become filled by fluid with the characteristic signs of this condition.

The mitral valve is most often affected. A soft systolic murmur at the apex, transmitted to the axilla, accompanied by a prolonged first sound and persistent reduplication of the second sound at the apex indicates a mitral regurgitation. This is often accompanied by a stenosis, especially in girls. The blowing regurgitant murmur is followed by a sharp first sound or later by a rumbling presystolic or diastolic murmur and a palpable presystolic thrill. A functional murmur tends to be basal, is usually rather harsh, tends to be louder in the recumbent position and to disappear on exercise. The murmur of endocarditis in its early stages is soft and blowing with a sharp beginning and sharp end point, and is distinct from the first sound; there is no change in the murmur in the prone or standing positions, and it becomes more intense with exercise. The diagnosis of endocarditis cannot be made from a single examination of the heart.

Aortic regurgitation, indicated by a soft diastolic murmur over and just to the left of the sternum and considerable cardiac enlargement, often accompanies mitral disease. Lesions of the other valves are less common.

Chorea and rheumatism bear a very close relationship. Chorea may be described as a form of cerebral rheumatism. It is more common in girls than in boys.

DIAGNOSIS

Early diagnosis of rheumatism is most important; it is often overlooked on account of the mildness of the symptoms and the dissimilarity to rheumatism in the adult. There is usually a prodromal stage in which

there is a rheumatic toxemia, not severe enough to send the child to bed. Headache, lassitude and indefinite pains not localized in the joints may be present. These children are pale, rather sallow, irritable, restless in sleep, have a poor appetite and show a loss of weight. There is a characteristic flushing of the cheeks in a hot room; this may lead to an erroneous suspicion of tuberculosis. The afternoon temperature may be slightly elevated. The toxemia manifests its action on the nervous system by irritability, sleeplessness, enuresis, etc. If an acute infection of the upper respiratory tract is followed by indefinite pains in the lower extremity, the possibility of rheumatic fever should be considered. Rheumatic relapses are largely caused by acute and often extremely mild pharyngeal infections. Usually there is an interval of ten to twenty-one days between the sore throat and the onset of the rheumatic symptoms. As before stated the family history and the previous history of the patient are most important in the diagnosis of rheumatism.

Acute osteomyelitis, congenital syphilis, tuberculous arthritis and Still's disease are the most common conditions to be differentiated.

PROGNOSIS

The prognosis of rheumatism as far as life is concerned is good as long as the heart remains unaffected. Death is rare in the first attack, unless it is of the malignant type. The tendency to recurrence increases the danger to the heart and several attacks usually leave a permanently damaged heart. The treatment of the first attack is the most important single factor in the management of the disease. If all children with rheumatic fever were kept in bed at least six weeks, the mortality of the disease would be greatly reduced and the number of cardiac invalids greatly lessened. The prognosis of rheumatism is really that of the associated heart condition. The younger the child the greater the danger of recurring attacks. An hereditary history offers an unfavorable prognosis.

TREATMENT

In regard to treatment much can be done in a preventive way by careful routine ex-

aminations. The establishment of clinics throughout the country is doing a great deal along this line. Removal of foci of infection is important. The tonsils have been convicted on circumstantial evidence of many evils for which they were not responsible. Routine tonsillectomy should not be performed. However tonsils that are markedly hypertrophied or diseased should be removed; also where there is a history of repeated sore throats, even if the tonsils appear innocent, they should come out. Dental inspection is also of prime importance. Until recently this was largely neglected, and even now there is room for improvement along this line. Exposure to cold and damp rooms and to poor ventilation should be corrected when possible. School physicians, health officers, teachers and nurses should be familiarized with the early symptoms of chorea. If this is done many children classed as nervous or fidgety, but who really are choreic, can be taken out of school and properly treated.

From the onset rheumatism should be considered a chronic infection and treated as such. Regardless of how mild or how severe the attack may be the one item that is of paramount importance is rest. Every case should be kept in bed at least six weeks—longer if the symptoms warrant it. It is often difficult to get the child—and the parents—to cooperate in this prolonged and, at times, seemingly unnecessary stay in bed. But a little patience and gentle persuasiveness on the part of the physician will usually accomplish it. Certainly the patient should be kept in bed until the pulse rate has returned to normal, irrespective of the other symptoms. The pulse rate is also an excellent guide in the convalescence as to how fast to allow the child to resume activities. In every case care must be taken to "make haste slowly". First allow the child to sit up in bed fifteen to thirty minutes; this time is gradually increased until sitting in a chair is allowed; this is followed by short walks. Do not allow the child to resume normal activities for several months. During this period of convalescence close watch must be kept on the pulse rate. Irregularity or intermittence of the pulse must also be watched for. Routine daily examinations of the heart should be made.

The affected joints should be splinted. Local applications of methyl salicylate or ichthyol may be made at the physician's discretion. Daily warm sponge baths and alcoholic rubs add to the patient's comfort. The room should be well ventilated and kept comfortably warm. Children do not stand cold applications as well as adults; hot cloths over the joint will afford some relief.

The diet during the acute period should consist chiefly of milk, eggs, cereals, bread and butter. Liberal feedings should be given. As convalescence begins the diet should be increased and worked up to about normal limits. Water should be forced throughout the disease. Orange juice or lemonade may be given *ad libitum*. A tonic should be started early, both to overcome the anemia and to correct the anorexia and malnutrition.

Epstein has investigated the possibility of giving fruits containing salicylic acid to pre-rheumatic and rheumatic children. He states that salicylic, benzoic, citric and tartaric acids, all anti-rheumatic, are found in various proportions in a free state or in the form of a precursor in strawberries, huckleberries, raspberries, cherries, plums, grapefruit, lemons and melons. He considers the use of these fruits as valuable in the prevention and treatment of rheumatism in children.

Aspirin or salicylates given for several weeks after the onset of tonsillitis have a tendency to prevent the onset of rheumatic fever.

At the onset of the disease calomel or castor oil should be given. During the course of the disease milk of magnesia is perhaps the best laxative to use.

Much harm has formerly been done by giving overdoses of salicylates. Twenty to thirty grains of aspirin, sodium salicylate or phenyl salicylate to a child of six years will produce as good results and do far less harm than much larger doses. It has been conclusively proven that the dosage of salicylate has no effect on the incidence of cardiac involvement. If the salicylates alone do not relieve the pain some analgesic such as acetphenetidin or amidopyrine may be given. At times codeine or morphine have to be resorted to. As stated, an iron tonic should be started early. Cod liver oil or

one of the malt extracts may also be used to advantage. Some men advise against the use of cod liver oil where there is valvular disease present, claiming that the cod liver oil tends to hasten the calcification of the valve leaflets.

Alkalies, formerly used extensively, are still given in conjunction with the salicylates, both to neutralize any free salicylic acid which may be present and also to neutralize the highly acid urine.

Nervous symptoms should be carefully watched for and treated. Bromides, veronal or some of the barbituric acid derivatives will usually allay the nervous manifestations. In cases of cerebral rheumatism ice cloths to the head are useful; in these cases codeine or morphine may have to be used.

In the treatment of cardiac disease in children good wholesome food, with plenty of milk and butter, is probably of more importance than any drugs. In decompensated heart lesions digitalis remains the drug of choice, in fact the only drug of any real value. By the use of digitalis the burden on the heart is lessened, the child is made more comfortable, and in many cases life is prolonged. Even in cases where the damage to the heart is so great as to preclude its becoming compensated the patient is made more comfortable and life is prolonged by the use of digitalis. Camphor, caffeine and allied drugs are of doubtful value as cardiac stimulants. Children with carditis or chorea should be kept at absolute rest from six months to a year.

Intravenous vaccination with hemolytic streptococcus has been tried in a small number of cases by Swift and others, with apparently good results in lessening the incidence of relapses. It is said to be applicable in those cases with a continued low grade infection or in those who, although temporarily free from symptoms, may reasonably be expected to have relapses.

Cancer of the Colon and Rectum—The importance of the fight against cancer is becoming more obvious every year. That the mortality rate from cancer is on a steady increase, aside from the allowances that may be made for more accurate diagnosis, is generally conceded. With the prolongation of life which Dublin indicates will continue for about twenty years longer, more and more individuals will be gradually thrust into the "tropic of cancer."—*Horsley, Virginia M. Monthly, July 1933.*

THE IDENTIFICATION OF CANCER CELLS IN SEROUS FLUIDS AS A DIAGNOSTIC MEASURE*

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Serous effusions in the pleural or peritoneal cavities of non-infectious origin may offer considerable diagnostic difficulty. Transudates due to malignant disease are apt to be especially confusing. Primary carcinoma of the lung can manifest itself through an accumulation of fluid in the pleural cavity at a time when other signs and symptoms of the disease have been surprisingly slight or indeterminate; or an ascites may be the only presenting sign of an implanting cancer of the stomach or ovary.

The time honored methods prescribed for the laboratory examination of such fluids offer but little help in working out the diagnosis. Gross appearance, specific gravity, and the content of protein or other bodies are determinable but vary so widely as to provide little useful information. The so-called cyto-diagnosis or study and numeration of cell types has only a limited field of application when carried out in the usual manner. The methods ordinarily prescribed for making cytological study involve merely the direct examination of the original or of the centrifugated fluid either in the wet state or in the stained smear. They have descended from the early days of clinical microscopy when it was a triumph to distinguish between a tuberculous exudate with its high lymphocyte content and the purulent exudate of a post-pneumonic pleuritis.

It is quite a different matter when the problem involves the trustworthy demonstration of tumor cells. Here we must insure the preservation of the finer cytological details and the avoidance of cell distortion. Both desiderata may be accomplished by the simple expedient of centrifugating the suspected fluid, fixing the centrifugated sediment with a good cytological agent, embedding the mass in paraffin, and cutting and staining as though one were handling a block cut from the solid body tissues. The method is capable of provid-

ing sections in which cellular detail may be brought out with great distinctness. More important still is the fact that the cellular relationships are preserved. The centrifugates from cancerous fluids often contain cell complexes of definite organoid arrangement. Occasionally they may contain microscopic fragments of the tumor mass itself in which even stroma elements may be recognized. Spatial relationships are of the greatest value in tumor diagnosis and when they can be seen in fluid centrifugates the diagnosis becomes simplicity itself. The clearness of the pictures obtained stands in sharp contrast to the uncertainties of the vague and distorted cellular elements revealed by the more orthodox smear methods.

The method of centrifugation is not new. It is said to have been used by Bahrenberg as long ago as 1895. In a short article published in 1917 Mandelbaum reports a technic essentially the same as that used in the present study and states that the method had been in use in his laboratory at the Mt. Sinai Hospital since 1900. It was developed also by Ellis at the Memorial Hospital in New York. The trick is so simple that its independent development by several workers is not surprising. It is curious, however, that it does not seem to have come into general use either in this country or abroad. It receives no mention in a comprehensive study and review of methodology published last year by Karp in the *German Journal of Cancer Research*.

Our own experience with the technic began ten years ago when it suggested itself through the finding of cell clumps suspected of being tumor fragments in a pleural fluid sent in to the laboratory for study. The surprising clarity of the picture revealed by the fixed sediment after the material had been consolidated by the centrifuge provided an assurance of diagnosis that has been steadily augmented by continued observation despite the discouragement of an occasional failure.

In the same year in which we first reported our experience with the method (1928) Zemansky summarized the results obtained at the Mt. Sinai Hospital through the use of an embedding procedure. From a large series of fluids examined he selected 113 cases in which verification of diagnosis

*Read to the Association in annual session, Montgomery, April 20, 1933.

had been accomplished by operation or autopsy. Seventy-seven of these were malignant. Of 54 abdominal fluids examined, 24 were reported as of malignant origin. In twenty the report was verified, an accuracy of diagnosis of 83%. Of 35 pleural fluids, 10 were reported positive and 9 were verified, a diagnostic accuracy of 90%. In the cases reported negative, the accuracy dropped to about 60% for the ascitic fluids, and 36% for the pleural fluids.

In point of numbers the present series is smaller than that of Zemansky although the number of positive cases from pleura and peritoneum is equal or greater. This is because the former includes a considerable number of cases in which the method had been used for the study of sputums, gastric contents, urine or other fluids. We agree with his conclusion that such material is but poorly suited to study. We have experimented with them in a few cases with very indifferent results although tumor cells could be recognized in one specimen of urine from a case of carcinoma of the bladder; and a recent spinal fluid contains cells almost certainly those of a brain tumor.

Restricting our attention to fluids from the two great serous cavities, the present series comprises 78 cases, 48 of which are known malignancies of pleura or peritoneum. Diagnosis was verified in 16 cases by autopsy and in 12 cases by operation or biopsy. In the remaining instances physical or x-ray findings or the subsequent development of the disease leave no doubt as to its nature. Sixteen cases reported as negative have likewise been shown by subsequent study to be free of malignant disease. Three of the 78 cases must be excluded because postoperative changes in the fluids had so far disintegrated the cells that no conclusion could be drawn from the microscopic study and in 12 cases the final diagnosis has been left in doubt on account of lost or incomplete records, the lack of satisfactory follow-up observations or, in 2 cases, because the patients are still under observation and final verification of the diagnosis has not been possible.

Pleural and peritoneal fluids are almost equally divided in number. All the cases were instances of carcinoma except one, this proving at autopsy to be abdominal lymphosarcoma of the type commonly

known as Hodgkin's disease. A definite diagnosis of malignancy was made in 33 cases, or 70% of the total. Ten cases, or 20%, were reported as "probably malignant". If the two groups are counted together as was done by Zemansky, the accuracy of diagnosis becomes 90%. In five, or 10% of the cases, the report was wrong or indeterminate. Three of these were reported negative. One case of primary carcinoma of the lung verified by autopsy was reported as "probably lymphosarcoma" and the opposite error was made in the case of Hodgkin's disease where epithelial cells were reported in the abdominal fluid.

It should be pointed out that the error of 10% in the final conclusion would have been somewhat larger except for the examination of repeated specimens in some cases. Thus one case definitely positive on second examination would have been transferred to the negative column on the basis of the original study. The first specimen was not fixed until after degenerative changes had taken place in the cells and nothing could be made of the cytology. In two other cases, each with four examinations, the definite diagnosis could be made only on one or two of the specimens. Some cases have been consistently positive or consistently negative on repeat specimens but in cases of doubt it is never safe to rest the diagnosis on a single examination especially if the fluid is old. In our experience it is not safe to follow the advice of Mandelbaum, and allow the sediment to settle over night before centrifugation. The fresher the preparation, the better the chance for identification of its cells.

On the other hand, the percentage of correct diagnosis increases with experience in the method. When the original slides were assembled for the preparation of the present review, each was studied and a diagnosis written down without reference to the original records. It was found that in several cases, originally reported as negative or "probably malignant", and especially among the latter, the review diagnosis was frankly positive. It is still true that there must always be cases in which cytological diagnosis will be impossible. Even in the presence of malignancy no tumor cells may appear in the fluid. Their readiness of demonstration must always depend not only

on the nature of the tumor itself but also upon the degree to which it has permeated the lymphatics or pushed through the serosa to grow upon its free surface. Also, as above indicated, a cavity that has yielded a positive fluid on one occasion may at another and even subsequent time provide one in which nothing but a few lymphocytes can be found. Whether this is due to laboratory manipulation or to the hazards of chance selection by the trocar is not clear. In any event, negative findings can never be accepted as excluding malignancy. On the opposite side of the balance there is the question as to the possibility of a false positive diagnosis. It is in this direction that most care should be exercised.

It has long been recognized that serous effusions of various causation often contain free mesothelial cells desquamated from the serosal lining of the cavity. They are large cells, strikingly epithelial in their characteristics. They may occur in sheets or masses simulating epithelial tumor fragments and according to some observers may even contain mitotic figures. The difficulty of differentiating them from tumor cells has perpetuated the laboratory tradition warning against the dangers inherent in this field of diagnosis. While the embedding method greatly simplifies the problem there still remains a small minority of cases in which the differentiation can not be made. One such case is now under observation. In another on which a pleural fluid was examined and an inconclusive report submitted, although it was felt in the pathologist's own mind that the cells were more likely tumor than non-tumor, the patient is alive three years later although his original cough and dyspnea persist. In these cases the one most dependable safeguard is an insistence on the finding of mitotic figures before any conclusion of malignancy can be reached. Our series does not contain enough negative fluids to warrant statistical statement of results for comparison with Zemansky's figures. There is, however, no indication that it contains the same high percentage of false positive conclusions and it is probable that the explanation lies in the importance given to this evidence of active cell growth.

Cancer cells as they occur in the fluids fall into several types. In many of the

cases examined their appearance has been such that diagnosis could be made with great ease. Thus there may be actual fragments of tumor tissue. In one case there was plain alveolar organization and in two cases definite papillary structure. In three pleural fluids, all from intrathoracic metastasis of mammary carcinoma, there were solid cell clusters of considerable size, suggesting fragments of epidermis. The same epidermoid clusters have been seen in bronchogenic carcinoma of the lung. The so-called colloid carcinoma encountered not uncommonly in the abdomen is quite distinctive. Even in the fresh fluid, its peculiar cell clusters and intercellular material may be readily demonstrated. The fixed specimen may contain tumor fragments of characteristic appearance or in their absence may show wisps of the typical basic stained mucinous material embedded in a serous coagulum and accompanied by peculiar epithelial cells of rounded type.

The appearance of cell clusters having marked organoid arrangement with occasional suggestion even of lumen formation is not uncommon. This tendency toward organoid grouping of tumor cells that seem without doubt to be floating free in the fluid while still undergoing division may at times result in the formation of small vesicles suggesting the alveoli of a glandular organ. Due to the close crowding of these formations in the centrifugated sediment one gets a first impression as though he were looking at an actual section through some solid organ. The vesicles are hollow balls of glandular epithelium one layer in thickness and made up of large numbers of cells. Serial sections made in three cases showing such formations have verified the structure of these little bodies.

The cases offering most difficulty in diagnosis are those in which the cells occur singly or in groups of only a few individual units. This is the group that has yielded our highest percentage of inadequate or wrong diagnoses. It is the only one where confusion with the mesothelial cells offers real difficulty. Even here, however, many specimens present cellular peculiarities sufficient to mark them as neoplastic. Aside from such general peculiarities as the large heavily stained nucleus and prominent nucleolus of the tumor cell, the

positive fluid may contain cells of giant proportions such as one could expect nowhere but in neoplasms and along with them are multipolar mitotic figures. Mitotic figures of the usual type may be extremely common or may be hard to find but when found they are in our opinion trustworthy indications of malignancy. It is only the rare case that fails to show at least a few cells of abnormal type or structure or a few examples of clustered cells that are quite unlike any cells of the normal body tissues.

Laboratory diagnosis from these fluids has in some of our cases been of little practical value except perhaps as it eased the burden of determining prognosis by confirming clinical diagnosis. This consideration applies especially to the cases of primary carcinoma of the lung. In other cases it has been of very considerable assistance in the diagnosis of obscure cases. In abdominal disease its diagnostic possibilities are considerable and it may afford valuable indication for or against the advisability of laparotomy. The skepticism rather widely entertained as to the value of the microscopic study of these fluids depends on the continued use of inadequate methods. Study of the centrifugated sediment should be a routine procedure in all cases of serous effusion where there is any doubt as to the nature of the underlying disease.

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THE FEMALE URETHRA AS A SOURCE OF URINARY DISORDERS*

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The purpose of this paper is to call attention to one of the smallest, yet one of the most neglected structures in the female. Up until recent years the female urethra was thought of only as a passageway to the bladder and upper urinary tract without being given any consideration as the primary or chief cause of many urinary disorders. This was probably due to the theory, ascribed to physiologists, that the function of urination was controlled by the bladder; and that all the changes in this func-

tion were due to abnormalities in the bladder itself while the very important urethra was forgotten.

In a recent review of cases Bugbee found lesions of the urethra partly or wholly responsible for urinary frequency in 690 of 1,000 cases.

Stevens,¹ in a study of 234 cases of urinary disturbance in the female, found the urethra entirely responsible for symptoms in 56 and partly responsible in 173.

My own experience in treating urinary disturbances in the female has impressed me with the fact that the urethra is entirely or partly responsible in a large number of cases. The accessibility of the structure and the ease with which it can be thoroughly examined makes one feel that every practitioner should give his patients the benefit of a thorough examination. I hope this paper will create an interest among practitioners in this particular part of the examination for urinary disorders in the female. A thorough knowledge of the anatomy of the female urethra will simplify the treatment of the more common disorders found in this structure. To refresh your minds I will briefly review the anatomy of this part.

ANATOMY

The female urethra² is a curved canal about one and one-half inches long extending from the bladder to the vestibule. It runs downward and forward behind the symphysis pubis and is slightly concave anteriorly. The external meatus is located in the vestibule between the clitoris and orifice of the vagina and is usually an inverted "Y" shape due to the prominence of a longitudinal fold on its floor. It is the narrowest portion of the canal and is surrounded by two prominent folds of mucosa, the lips of the meatus, which often conceal the urethral lumen. It is not only shorter but also more distensible than the male urethra. It corresponds to that portion of the male urethra lying between the bladder and the utricle.

The urethral wall is composed of a mucous, submucous and muscular coat. The *mucous* coat is lined with stratified squamous epithelium except near the bladder where it becomes transitional in type. In the inner third of the canal the mucosa presents many small tubular glands while the

*Read at a meeting of the Southeastern Division of the Association, Luverne, October 12, 1932.

outer portion contains fewer and somewhat larger glands. On each side of the external urethral orifice, usually just within the canal, are found the openings of the para-urethral ducts, the largest of which are called Skene's glands. These ducts may open on the vestibule outside of the urethral orifice. The *submucous* coat or erectile tissue coat is composed of loose areolar tissue, numerous veins and some bundles of unstriated muscle. The *muscular* coat which is continuous with that of the bladder, consists of a non-striated internal, longitudinal layer and a non-striated outer, circular layer. Additional fibers surround the posterior portion of the urethra at the vesical outlet forming the involuntary sphincter of the bladder. Between the two layers of the triangular ligaments the canal is surrounded by a layer of superficial, striated, muscular fibers, the compressor urethrae or sphincter uro-genitalis. The bladder is emptied by contraction of its detrusor muscle following the relaxation of the above mentioned involuntary sphincter of the bladder and the compressor urethrae muscle. The blood supply is from the internal pudic, inferior vesical and uterine arteries. The veins join the prevesical and pudendal plexuses. The lymphatics extend to the inguinal and pelvic glands.

EXAMINATION

The woman should present herself for examination without voiding urine or without cleansing the vulva by bath or douche for at least four hours preceding the examination. The dorsal or knee chest position can be used, the dorsal being more satisfactory in most cases. The labia are separated at their upper margin and the meatus cleansed with pledgets of cotton soaked in mercury cyanide or bichloride solution. By pressure on the lateral margins of the meatus any discharge present can be obtained on sterile swab or platinum loop for examination. The folds of mucosa at the meatus are closely observed and any redness or pouting of the para-urethral ducts or Skene's glands noted. The urethra is then palpated per vagina throughout its entire length. Any secretion appearing at the meatus is transferred to a slide for examination. The urethra normally feels like a rounded tube, moves slightly from side to

side as rolled beneath the finger, and is not sensitive to pressure. Tender sensitive areas along the urethra are usually points of infection. Localized induration or dense thickening with immobilization of the urethral wall point to peri-urethral inflammation, or infiltration. Localized nodules or abscess pockets can best be defined by palpation through the vagina after a catheter or sound has been passed into the urethra.

The urethra is next calibrated with bougies, sounds or dilators to determine presence of strictures.

Due to the sensitiveness of the urethra it is frequently necessary to use some local anesthetic before passing instruments into it. Cocaine solution is very satisfactory in spite of its bleaching effects and rapid absorption. Novocaine in 2 to 4% solution can be used. The anesthetic can be applied with applicators or instilled into the urethra.

The patient is catheterized and, unless a stricture is encountered, urethroscopy is done. The Kelly urethroscope using reflected light from a head mirror or the lighted urethroscope of the McCarthy type are very satisfactory because of ease of handling and sterilization. The dorsal or knee chest position can be used.

INFECTIONS

Acute—Most infections of the urethra are gonorrheal in origin but, due to the proximity of the vagina and rectum, infection due to colon bacilli or staphylococci are quite common.

Frequency, burning, and urgency of urination are the most common symptoms. Examination of the urethral meatus reveals a congested, red, pouting mucous membrane covered with thick yellowish pus. A smear will reveal gonococci or other organism producing the infection.

Treatment—Rest in bed, bland diet, large quantities of water, and sedatives such as sandalwood oil, hyocyamus or belladonna. Local treatment should be avoided if the infection is very acute. Later instillation of a mild solution of some silver salt such as argyrol can be used. Irrigations with a mild (1-5000) solution of potassium permanganate give excellent results.

Chronic—After infection has been present several weeks, symptoms are about the

same as in the acute case but are not so severe. The meatus may be puckered but does not show as much redness. The discharge is usually slight and the smear is obtained by milking the urethra. The para-urethral glands are infected and the red tipped ducts of Skene's glands may appear by separating the folds of the urethral meatus.

Treatment—Instillation of protargol solution 1% ; silver nitrate solution 1 to 3% in urethra and dilatation of urethra.

INJURIES TO URETHRA

The most common cause of injury to the female urethra is childbirth, which is due to compression of the urethra between the head and symphysis pubis or between forceps and symphysis. In this way there may be laceration, contusion or tearing of muscle fibers or mucosa, or injury to nerves, vessels or lymphatics. The stress and pull on the urethra is accentuated in those women in labor who have previously borne children and have lost some of their bladder support due to weakness of the anterior vaginal wall. These injuries may not be recognized at the time of delivery but later appear in the form of scar tissue formations, infiltrated areas, or areas of dilatation. Injuries to nerves may result in hyperesthesia or paraesthesia or partial loss of control of the sphincter muscles.

Other injuries to the urethra are rather uncommon, because of the protection of the structure by bone.

Any urinary symptoms following automobile accidents, especially where there is injury to the pelvic bone, may be due to injury to the urethra in the female.

Injury by catheter in postpartum or post-operative cases is very common. Even in skillful hands the passing of a glass or metal catheter causes some trauma to the urethral mucosa. The soft rubber catheter offers less trauma although harder to keep sterile.

PROLAPSE

This may be partial or complete. It usually occurs in childhood or in the aged. In children there is usually a redundancy of mucosa resulting in extrusion of mucosa through the external meatus.

Treatment—If extrusion continues to occur after manual reduction, excision of the redundant mucosa and suture of the mar-

gin of mucosa around the meatus with fine catgut is necessary.

STRICTURES

Strictures are one of the most common causes of bladder disturbances in women and one of the most common sources of error in diagnosis. They are frequently overlooked by the gynecologist, urologist and general practitioner. They are most commonly found at the external meatus, whether congenital or acquired.

Strictures Due to Infection—As from gonorrhea are usually located just within the external meatus.

Traumatic strictures may be found along the lumen of the canal, but those due to childbirth are most commonly at the external meatus. Due to the sensitiveness of the bladder to reflex influence the symptoms may be out of proportion to the amount of pathology found. The symptoms in order of prominence and severity are: (1) frequency of urination; (2) pain which may be referred to the urethra, bladder, sacrum or both lumbar regions; (3) burning; (4) urgency; (5) difficulty; (6) constant desire to urinate; (7) partial incontinence or dribbling.

Diagnosis—Best made by olive tipped bougie. A sound is not as reliable for diagnosis.

Treatment—No abnormal condition of the urethra responds more readily to treatment or shows such rapid amelioration of symptoms as do strictures when properly dilated. A dilator or sound which will fit into the stricture should first be used. The size of the dilators should be increased two or three numbers each treatment until a number thirty French can be passed. Anesthesia by topical application can be used if necessary. Strictures should be dilated every three to six days. The infiltration is usually soft and is readily absorbed, necessitating only a few dilatations.

NEOPLASMS

Neoplasms of the urethra are usually confined to the mucosa or its blood vessels and are mostly benign in character. Those usually seen in general practice are papilloma polyp, cyst and angioma. Other types of benign growths, namely fibroma, myoma or fibromyoma are quite rare and need not be considered here.

The most common of the benign neoplasms seen is the raspberry-like tumor on the surface or just within the external meatus. It is called caruncle and is seen in the majority of women past thirty years of age, especially in those who have borne children. The term caruncle is applied to any tumor found at the external meatus in the female consisting of vascular, polypoid, or granular tissue.

Symptoms—Pain, painful and frequent urination and bleeding.

Treatment—Electric cauterization is most satisfactory and is easily applied and requires very little anesthesia. Excision or actual cautery requires more work, more anesthesia and there is more chance of recurrence.

Papilloma Polyp.—These hypertrophied projections from the mucosa occur in all parts of the urethra but are more common about the internal meatus, either on the margin of or just outside the internal sphincter. Due to their soft consistency these tumors lie flat against the urethral wall making diagnosis quite difficult. They may be concealed in a fold of mucous membrane, necessitating careful search with the cystoscope or urethroscope.

Symptoms—Vesical tenesmus, painful, difficult and frequent urination and hematuria. Symptoms are variable as to frequency and duration.

Treatment—High frequency current by means of wire electrode passing into base of the growth is the best means of complete and permanent cure. Crushing with forceps, cutting with scissors or burning with caustic sticks are more difficult and offer more chance of recurrence.

Cysts—Cysts of the urethral mucosa are quite common. They may occur anywhere along the mucosa. If they become large or troublesome they should be removed under local anesthesia by high frequency current.

Malignant Neoplasms—These growths require such radical treatment either by surgery or radiation as well as hospitalization that they cannot be covered in the limited time allotted for this paper. I do want to emphasize one point. Any tumor about the external meatus which reveals growth, invasion of underlying tissue, or ulceration should be viewed as cancer until proven otherwise.

CONCLUSIONS

(1) The female urethra is the partial or sole source of many urinary disorders. (2) The location and structure of the female urethra renders it very liable to injury during childbirth. (3) In all patients complaining of difficulty in urinating the urethra should not be overlooked as a source of trouble. (4) Most urethral lesions can be treated in the office if properly diagnosed.

REFERENCES

- (1) W. E. Stevens: Chap. XXV, Vol. IX, Keen's Surgery.
- (2) A. T. Osgood: Chap. X, Vol. I, Cabot's Modern Urology.

A SINUS RETENTION CANNULA

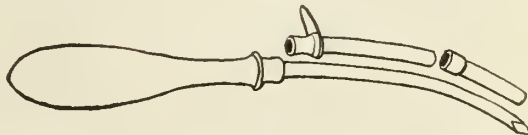
JOHN A. KEYTON, M. D.

Dothan

In order to facilitate the treatment of maxillary sinusitis a retention cannula has been devised which may be left in the sinus wall for any length of time desired.

The instrument is made in accordance with recognized designs of such instruments except that the distal end of the cannula is segmented, being seven-eighths inch for adult use and five-eighths for children.

The cannula is introduced in the ordinary method of doing a Douglas puncture and the proximal portion withdrawn, as this fits into the distal by a "slip on" connection.



The advantages of this method are manifold; irrigation of acute sinuses is easily done without the necessity of repeated punctures and the cannula is also used in the treatment of chronic purulent sinuses where there is no presence of polypoid or other exuberant growth.

The instrument may be left in place indefinitely and remains fixed in the naso-antral wall, being unable to slip out because of the normal curve of the instrument fixing itself by pressure and being unable to lose itself in the sinus because of a shoulder made upon the cannula which not only makes it impossible to lose the cannula in the antrum but also limits the depth to which the sinus may be penetrated with the cannula and so preventing possible damage to the orbital or external sinus wall of the antrum.

THE JOURNAL

OF THE

Medical Association of the State of Alabama

Editor-In-Chief

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THE PRESIDENT'S COMMUNICATION

The editorial staff of the Journal desires to direct the particular attention of our "reading members" (meaning, of course, the *entire* membership) to the communication from the President appearing in the Association Forum of this issue. With lucidity and force he first points out some of the important things which confront the medical profession at large in its broader relationship to society and how inextricably interwoven are our problems with the warp and woof of modern social living. A proper solution for questions of such magnitude cannot be had through a *noli me tangere* attitude on the part of a group so vitally and intimately interested as the medical profession. History clearly points that problems calling for readjustment and adaptation to conform to a changing order are likely to be more sanely and justly solved if recognized by those directly concerned and a solution sought from *within* rather than being forced from *without*. Hence the need at this time, as suggested by the President, both for zeal and concert of action on the part of organized medicine in order that any readjustments made shall be in keeping with the traditions and ethics of the profession. Secondly, and more specif-

ically as pertains to our own organization, he outlines somewhat in detail how the entire membership may participate through taking a more lively interest in the scientific, the economic and the public health activities which should rightfully claim the attention of all interested and thinking doctors. His suggestions on public relations and economics are particularly timely. The exhortation extended the newly created standing committees should prove productive of much good. The stress placed on the need for physicians to appreciate more fully their own responsibilities in the health affairs of the State in order that they can the better inform both the people and our legislature of the value of a well-directed health system is quite opportune. It is a fact that most of the opposition encountered by any given health activity, regardless of the source, springs from a lack of complete understanding and grasp of the problem involved. The interested and informed physician, who, in Alabama, is a co-partner of health, thus immediately becomes a most valuable ally whose educational help is now sorely needed. Every member of the Association may feel secure in subscribing to the principles enunciated in these utterances of the President.

THE MILWAUKEE MEETING OF THE AMERICAN MEDICAL ASSOCIATION

The Milwaukee meeting of the American Medical Association has now passed into history. Many factors combined to make this meeting not only interesting and profitable but memorable as well. The beautiful, orderly and well-governed city of Milwaukee, with its six hundred thousand population, seemed eager and waiting to greet, with outstretched and open arms, the five thousand medical workers gathered in her midst from all points of the compass. The various entertainment committees for both the physicians and the Woman's Auxiliary had planned their programs so efficiently as to absorb every moment not consumed by scientific work. Outstanding among the many features of entertainment provided were the presidential reception and ball on Thursday evening and the dinner tendered on Monday evening by the Milwaukee County Medical Society to the officers and

delegates of the American Medical Association at the Wisconsin Club. Incorporated into the latter were much fine music and singing and a burlesque "take-off" on "Trends Toward Social Insurance and State Medicine".

Besides these social features, the spacious and commodious municipal auditorium afforded every convenience and comfort to the various section meetings as well as to the numerous scientific and commercial exhibits. Motion pictures were lavishly employed in both types of exhibits in order to better attract and hold the attention; and a noteworthy feature was the fact that twelve of the fifteen sections of the Scientific Assembly sponsored section exhibits under the guidance of special committees. Among the scientific exhibits were to be found the interesting charts and graphs by Dr. Harris, of Birmingham, dealing with hyperinsulinism and dysinsulinism.

The House of Delegates convened promptly at ten A. M. on Monday morning and worked steadily and speedily through Monday and Tuesday and part of Thursday. Many resolutions and topics of interest to the profession were introduced, discussed and acted upon, amongst which were the following:

(a) The problem of regulation and control of specialism. The decision was reached that the Council on Medical Education and Hospitals of the American Medical Association should serve as a co-ordinating and clearing centre, working in close harmony with and utilizing the various groups already set up. This would appear to be a sane and proper approach to the solution of a rather difficult and complicated problem which has many aspects, not the least of which is the legal side.

(b) The endorsement by the House of Delegates of the principal Minority Report of the Committee on the Costs of Medical Care.

(c) The endorsement of President Roosevelt's policies and program in the matter of dealing with the Veterans' Bureau and in the matter of compensation and hospitalization of disabled veterans.

(d) A refusal on the part of the House of Delegates to have appointed a committee to study and gather factual data on birth control, which committee was to make its re-

port at the next annual session of the American Medical Association. The rejected resolution carried the proviso that no part of this study was to be published in advance, and that it was to be submitted to the House of Delegates in executive session. While this action of the House was in line with that taken at several previous meetings in not directly placing its stamp of approval on the birth control movement, one can but feel that no hesitancy should be had and no harm could be done by the endorsement of an unbiased and comprehensive study subsequently to be acted upon.

(e) The endorsement of the recommendation of the Board of Trustees to publish, during the current year, a new (13th) edition of the Medical Directory of the American Medical Association.

(f) The endorsement of a resolution decrying the inimical treatment or persecution of scientific and medical men anywhere or under any flag.

The messages of both President Cary and President-elect Lewis, delivered before the House on Monday morning, were appropriate and scholarly and each stressed, in beautiful fashion, the more important problems now facing the profession. In each of these, as well as in all of the deliberations and discussions in the House of Delegates, a distinct note of closer co-operation and more sympathetic understanding between organized medicine and the workers in preventive and public health fields was clearly discernible. Of particular note throughout the entire meeting was the keen interest displayed by the lay press and its eagerness to convey to the people the newer scientific things which the medical profession had so lavishly assembled.

To guide the destinies of this great medical organization Dr. Walter L. Bierring, of Des Moines, Iowa, a lifelong worker in the American Medical Association and Secretary-Editor of the American Federation of State Medical Boards, was chosen as President-elect and Dr. John H. Musser, of New Orleans, Louisiana, as Vice-President. Dr. Olin West and Dr. F. C. Warnshuis were re-elected as Secretary and Speaker of the House, respectively. As Treasurer, Dr. Herman L. Kretschmer, of Chicago; as members of the Board of Trustees, Drs. Austin A. Hayden, of Chicago, and Chas.

B. Wright, of Minneapolis; as a member of the Judicial Council, Dr. John O'Shea, of Spokane, Washington, and as a member of the Council on Scientific Assembly, Dr. James G. Paullin, of Atlanta. Dr. James S. McLester, of Birmingham, was re-elected a member of the important Council on Medical Education and Hospitals.

Cleveland, Ohio, was the lucky city chosen for the next annual meeting.

All factors considered, and despite the pinch of hard times, this, the eighty-fourth annual session of the American Medical Association, will pass into history as one of its most important, most pleasant and most profitable gatherings. J. N. B.

LEGISLATION AND CONTROL OF OPHTHALMIA NEONATORUM

Reference in the Journal of the American Medical Association* to the recent adoption by Illinois of legislation making mandatory the use of a prophylactic agent for the prevention of ophthalmia neonatorum recalls to mind that as far back as 1919, Alabama saw fit to so protect its newborn.

Obstructive tactics by pseudo-scientific cults had delayed the passage of such legislation in Illinois. Only last year, the then Governor of the State vetoed the bill after its passage by the State Legislature because of the vociferous opposition of Christian Scientists. One of the benefits to be derived from Alabama's unique health machinery, in which the medical profession of the State has the legal responsibility for the protection of public health, is that constructive legislation of this character can usually be put into effect readily and with little or no opposition.

In a report in 1931, the Division of Vocational Education of the State Department of Education of Alabama showed 909 totally blind and 978 partially blind persons in Alabama. Of these, 254 of the totally blind and 420 of the partially blind had been so from birth. It is well known that for the larger proportion of these the blindness was due to ophthalmia neonatorum.

Beginning with July 1928, the Laboratories of the State Board of Health began the manufacture and distribution of wax am-

pules of silver nitrate solution, free to all physicians and midwives of the State. This provision undoubtedly has led to much greater compliance with the law requiring the prophylactic use of silver nitrate. At the same time, in the various county health departments, the county health officers and nurses have given midwives more specific instruction in the use of drops in the eyes of newborn babies. These contacts with midwives revealed a vast ignorance among them as to the proper use of such prophylaxis and the ineffectiveness of much of the so-called prophylaxis of previous years.

In consideration of these facts, the following figures relative to the decrease in reported cases of ophthalmia neonatorum in Alabama with the increased distribution of ampules of silver nitrate are most interesting:

Year	Ampules of Silver Nitrate Distributed	Reported Cases of Ophthalmia Neonatorum
Last 6 mos. 1928.....	11,344	25
1929	20,313	26
1930	28,491	22
1931	46,896	14
1932	47,500	18

For the three years prior to free distribution of silver nitrate ampules, the number of reported cases of ophthalmia neonatorum had been in 1925, 36 cases; 1926, 24 cases; and 1927, 37 cases. There has, therefore, been a definite and decided drop in number of cases of this disease since a more thorough distribution of the prophylaxis has been made.

It should be recalled that there are now about 65,000 live births in Alabama each year. No doubt, many physicians, and especially hospitals, prefer to use a prophylactic solution furnished by themselves. The purpose of this editorial, however, is to bring out the fact that with the proper administration of this prophylaxis immediately after birth, all cases of ophthalmia neonatorum should be prevented. When a case does occur, it should be promptly reported to the county health officer. As in the case of all communicable diseases, it is only with the prompt and complete reporting of all cases that local health departments can take the proper steps to prevent future cases and the State Department measure the success or failure of its program.

*Editorial, J. A. M. A., April 29, 1933.

BOUND VOLUMES OF THE JOURNAL

On page 82 of the August 1932 Journal, note was entered as follows: "It is believed that there are those in the Association who will want each year's volume of the Journal bound in permanent form for the library shelf. If the Secretary is correct in this assumption, he advises that each monthly number be preserved until the volume is complete. The Secretary then will be glad to lend such aid as is necessary

to have the volume bound at a minimum cost."

Volume Two was concluded with the June 1933 number. Members of the Association, therefore, who wish the twelve issues up to and including the June number bound may so advise the Secretary. This will permit him to seek quotations on binding, which information he can furnish members concerned with such other details as may be necessary.

THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

A MESSAGE FROM THE PRESIDENT

James R. Garber
Birmingham

The current year is likely to prove an important one in the history of organized medicine; problems are arising which rightfully should claim attention—problems of adjustment, stabilization, and of reconciliation. The Medical Association of the State of Alabama must re-enter the forum of civic activity and therein exhibit the latent, though none the less effective, statesmanship that has characterized it in the past. The organization and subsequent development of the Association reflects a profound knowledge of statecraft, and, as in former years, the work and influence of organized medicine in Alabama must remain moored to the pillars of this science. Perhaps in other states the intrinsic knowledge of public health work has been as far-seeing and comprehensive as in Alabama; but, the factor which has been largely responsible for our singular and distinctive triumphs has been a well conceived and unique medical organization. With this splendid and unparalleled asset intact and confronted with major problems for solution, the physicians of Alabama must awaken from the sleep of inactivity; they must resume the role of leadership; they must revive the charm of interest and they must adopt practicality as a guide in the time of confusion and uncertainty.

To those subscribing to these thoughts, inspiration and enthusiasm must come. A desire to serve should be but the father to the act. There are sufficient duties to perform to engage the attention of every member of the Association and even if the year's program were limited to only one item that one should receive active and unanimous support. As one of the executive officers of the ensuing year the following suggestions for consideration and execution are offered.

COUNTY MEDICAL SOCIETIES

Inasmuch as "a chain is only as strong as its weakest link" it is essential that the county medical units which constitute the Association develop an alert and serious existence. A feeling of responsibility must replace indifference, and the sense of importance and pride of being articulate, in matters relating to the whole, must supplant the attitude of letting the other fellow do it. At the next annual meeting of the Association *there must be no delinquencies either in representation or dues*. In conjunction with the President, the able, loyal and active Vice-Presidents will accept this challenge of cooperation as an objective worthy of diligent and interested service.

COMMITTEES

These agents should be regarded as indispensable departments of administration.

They are to the Association what fact-finding committees are to government, industry and finance. Their mere creation by our own act implies a status of usefulness, an element of necessity. The nomination of committee and personnel does not constitute the sole discharge of duty nor does acceptance of membership terminate the fulfillment of obligation. A mutual and continued contact between officers of the Association and committeemen will be stimulating and effective. Given a specific problem for investigation, study and recommendation, the urge for completeness and thoroughness should transcend superficiality and the conception of irrelevancy. At the 1933 session of the Association all pre-existing standing committees were dissolved and a reorganization of the same voted. The implications of such an act are patent; consequently the formation of the authorized committees is being performed with the supreme thought of a **CALL TO SERVICE OF MEN FOR SERVICE**. It is the request and ambition of your President that *each committee will present a comprehensive, analytical and studious report at the next annual session of the Association.*

PUBLIC RELATIONS

"In unity there is strength." The medical profession serves the public and therefore stands in intimate relationship to society. The most conspicuous service to be rendered by the physicians relates to *education*. There must be uniformity in information; there must be mass action in effort; there must be coordination. Medical, sociologic, economic, legislative and political science, as it pertains to medicine, must be dispensed by the profession in respective localities as well as at the central seat of government. The burden of such propaganda must not be shouldered upon the state health officials *solely*; on the contrary, as representatives of organized medicine in Alabama, these officials should enjoy the hearty and constant support of every physician. To attain this end it is proposed to closely tie in the individual county medical societies with the State Committee on Legislation and Medical Economics, recently created by the Association, which will function for the whole organization. The State Committee, the Committeeman

from each district and the County Boards of Censors of the various medical societies will constitute the instrumentalities for this service.

ECONOMICS

Conditions, influences, and customs vary in different parts of the State. It is obvious that a certain plan of action for one section might call for modification in another. *Improved economic conditions for all doctors can be and will be a common goal*, but achievement of end results must be attained by the careful process of elimination and substitution. Social welfare work, compensation for charity services, hospitals, priority claim for professional services in insurance settlements, industrial medicine, health activities, contract practice and other economic items are pertinent issues for discussion and settlement.

LEGAL TESTIMONY

The medical profession should exert every energy and influence to preserve the value and dignity of medical expert testimony. It may well be that some of the disrepute that has been visited upon the profession, in this connection, might have resulted from the conduct of its members. There likely has been flagrant disregard of propriety and possibly a callous intent of purpose by some physicians in submitting evidence in court. A determined effort must be made to bring the legal and medical professions into harmony and agreement on this subject so that the qualified doctor, desirous of promoting justice and fair play, will respond to such summons, and, having upheld the traditions and honor of his profession, receive compensation commensurate with a superior knowledge which is expected to be displayed.

OLD AGE BENEFIT

Perhaps fortunately the tragedy of old age, with an attendant destitution, does not often overtake physicians. Seemingly, the price of sacrifice in behalf of his fellowman is paid by comparatively early death. Luckily, the majority of those surviving a life of usefulness have been sufficiently provident to provide for this enforced period of inactivity. But there does remain a minority percentage destined to suffering and hardships. This problem should be ac-

corded sympathetic consideration at our hands; compassion and the brotherhood of man demand it. In other walks of life the example of pension is legion. The retired soldier, industrialist, labor employee, jurist, minister, educator and members of other arts and crafts receive compensation after years of faithful and arduous service. Why not the doctor? And why not from the bounty of those who know best of the life spent in the practice of medicine? The suggested benefit does not propose an indiscriminate inclusion of old age doctors nor does it contemplate a subsidy,—just a conservative and humane application.

SCIENTIFIC EFFORT

Education is the mainspring of progress. It is the current of achievement. There should be no limitations in its dispensation and regardless of its scope, the physicians must embrace its significance and pronouncements, if in turn, they hope to mold opinion within and without the ranks of the profession. The officers responsible for such duties must approach their performance with a consciousness of trust, realizing that a wholesome exchange of ideas is conducive to manifold and far-reaching results. Such a program should be a regular occurrence in every county society. District and state meetings should augment the wholesome growth of scientific discussion and in all instances, the individual members must contribute to the

movement by faithful attendance at meetings. Herein lies the essence of mutual regard of officer for member and member for officer. To be informed is a challenge to ignorance. There is wisdom in concerted action. To be in the vanguard of education is compensation and contentment. The promotion of medicine in Alabama, in its every phase, should be the chief and spurring aim not only for the present year, but for successive years. No problem is too grave and none should be too insignificant to enter into the deliberations of our body. If there ever was a time when it became men wise in their own self esteem to lay aside the panoply of individualism, to subordinate the tempting bauble of selfish interests for the good of the organization, that period is ripe now. Let one be slow to hamper the usefulness, impede the progress or trail the proud banners of the Association into the dust of disrespect before our compatriots within or without our camp.

Much has been said, by physicians, of the incontestable right of the medical profession to have complete charge of health matters in Alabama. To be consistent in such a position physicians must accept the obligation unreservedly and, in addition, it would be the better part of wisdom for the profession to pay attention to its public business through its own initiativeness rather than to have it impaired or lost by default or due to inertness. Some one will surely do the job!

DEPARTMENT OF PUBLIC HEALTH

BUREAU OF ADMINISTRATION

J. N. Baker, M. D.,
State Health Officer in Charge

ACCOMPLISHMENTS OF A COUNTY HEALTH DEPARTMENT

Foreword

Rarely before has it been so necessary that the activities and accomplishments of county health departments be called to the attention of the people of the State. The citizenship in the main is quite sympathetic with the efforts being exerted to lessen morbidity and to decrease mortality. Its sympathy may be expected to attain new and higher levels when facts are made available showing results attained. With such thought in mind, the Lee County Health Department prepared the

following summary of its work during the period July 1, 1930-May 1, 1933.

The Editorial Staff of the Journal considers it an eminently worth-while contribution to the cause of public health in Alabama and therefore accords it a place in these columns.

*Summary of Activities
Lee County Health Department
July 1, 1930-May 1, 1933*

The program of a county health unit must be directed toward conservation of life and promotion of health of all citizens within the county. The various methods of attacking health problems presenting are classed as activities and will be described accordingly.

COMMUNICABLE DISEASE CONTROL

Investigation has been made and prompt isolation instituted of all cases of major communicable or contagious diseases, in close cooperation with the physicians.

Diphtheria has been studied and all efforts directed toward its control. A reduction of 60% in cases and almost total disappearance of deaths have been the results attained since 1930. A one-dose immunization for diphtheria has been worked out and perfected by this department.

Other contagious diseases, as typhoid fever, scarlet fever, and smallpox, have shown a marked reduction through our efforts. A reasonable estimate of lives saved from these diseases for a three year period is twenty-five.

In our special tuberculosis clinic approximately 6,000 persons have been tested to date; 1,500 have been given complete examination. The benefits of this project, while they are appreciated at present, will be more fully realized at a later date.

LIFE CONSERVATION IN MOTHERS AND CHILDREN

In 1930 Lee County's maternal and infant death rate was the eighth highest in Alabama. In 1932 it was the twenty-seventh. This means a saving of approximately 30 lives each year. Our high death rate in this respect has been due to two facts, namely, a 52% Negro population and a 70% delivery of all babies in the county by midwives. The number of midwives practicing has been reduced from 170 to 68 and these are instructed and are under continuous observation.

LIFE CONSERVATION IN CHILDREN AND ADULTS

A physical defect which exists should be detected and corrected to avoid impairment of a healthy body. For this purpose, we have examined over 13,000 persons to be in a position to properly advise them or their parents.

EDUCATION OF THE PUBLIC IN HEALTH PROMOTION

Every available means is used to carry the proper information to the people, in order that they may more intelligently protect their health.

155 articles in our county newspapers have reached thousands of our citizens.

Lectures and talks have advised over 37,000.

Visits made into the field to carry the message in its many forms have totaled over 30,000.

Persons coming to the office of the department to obtain advice, exclusive of those coming for examinations, immunizations, etc., have been over 5,000.

Public Health is purchasable! A human life has been valued, figuratively, at \$3,000.00. The cost of sickness which is avoidable is difficult to estimate. Realizing that in the health, both physical and mental, of our present and future citizens lies our strength, the amount contributed by the appropriating bodies to cover the cost of such service is a small fraction of its real value.

A statistical summary will afford a further idea of the scope of the services rendered:

1. Communicable Disease Control	
a. Cases under supervision.....	252
b. Cases isolated and contacts quarantined	505
c. Visits to cases, etc., under quarantine	1,082
d. Investigations	172
e. Typhoid inoculations	9,418
f. Smallpox vaccination	2,337
g. Diphtheria inoculations (toxoid)	3,447
h. Diphtheria tests (Schick).....	5,065 22,278
2. Medical Examinations	
a. Infant and preschool.....	256
b. School children	8,428
c. Inmates of county institutions	679
d. Applicants for relief, etc.....	139
e. Special and miscellaneous.....	1,291
f. Tuberculosis	1,500
g. Dental	724 13,117
3. Nursing Service	
a. Prenatal visits	1,477
b. Postnatal visits	453
c. Infant visits	1,918
d. Preschool visits	851
e. School children visits.....	2,330
f. Tuberculosis visits	3,884
g. Midwives' visits	2,443
h. Miscellaneous visits	450 13,806
4. Sanitary Service	
a. Homes sanitized	1,073
b. Food-handling inspections	3,819
c. Inspection of public and private premises	4,319
d. Nuisances corrected	629
e. Inspections of dairy farms and milk herds	1,812
f. Promotional visits for mosqui- toes, etc.	2,892 14,544

5. Educational Activities	
a. Lectures, talks, and picture shows	746
b. Attendance	37,064
c. Newspaper articles	155
d. Office consultations and conference visits	3,887 41,852
6. Miscellaneous Services	
a. Laboratory specimens submitted	4,860
b. Number venereal disease treatments given by physicians	6,710
c. Visits to and consultations with physicians	991
d. Visits to improve birth and death registration	1,054
e. Tuberculin testing for special clinic	5,600
f. Visits and conferences with other county agencies	685 19,900

BUREAU OF LABORATORIES

Catherine R. Mayfield, Acting Director

RABIES IN ALABAMA
JANUARY 1923-APRIL 1933

Rabies or hydrophobia is one of the most sensational diseases to which human flesh is heir. It has been known since the time of Aristotle (300 B. C.) but it was not until 1804 that it was demonstrated that the virus was present in the saliva of the infected animal. A successful means of combating this dreadful disease was not used until 1884 when Pasteur discovered that the brain and spinal cord of rabbits inoculated with rabies could be used as a vaccine. Since then deaths from rabies have decreased tremendously. For a period of time a person bitten by a rabid animal had to go to the Pasteur Institute in Paris for treatment. Later, laboratories in America and other countries began the manufacture and distribution of the vaccine.

The Alabama State Legislature of 1911 appropriated to the State Health Department a sum of money part of which was to be used to conduct a Pasteur institute for the free treatment of all residents of the State who were bitten by rabid animals. It was necessary for such persons to come to Montgomery and remain twenty-one days, until the treatment was completed. The State Board of Health began the state-wide distribution of rabies vaccine in 1922, furnishing it free to all indigent patients. In 1931 the State Laboratory in Montgomery began the manufacture of the vaccine to be

furnished free to all residents of Alabama. Despite the availability of the vaccine there yet occur each year several deaths from rabies. These deaths are usually in persons so badly bitten that rapidity of development of the disease does not afford time for the treatment to take effect. About one-half as many more persons die of rabies who for some reason fail to take treatment. In Table I are recorded the number of human deaths from rabies in Alabama since 1923, together with the number of positive animals examined and treatments given.

TABLE I
DEATHS FROM RABIES IN ALABAMA
JANUARY 1923-APRIL 1933

	Deaths (Human)				Positive Heads (All Animals)	Treatments Given
	Total	Treatment				
		Yes	No	No History		
1923	3	1	1	1	218	586
1924	2	2			639	1,272
1925	2		1	1	607	1,413
1926	4	2	1	1	761	1,715
1927	4	2	1	1	547	1,424
1928	4	3		1	560	1,781
1929	1	1			526	1,525
1930	3	2	1		442	1,785
1931	3	1	2		613	2,667
1932	2		2		836	3,676
1933 (April).....	1	1			324	1,367
TOTAL	29	15	9	5	6,095	15,635

Over six thousand animals have been found positive for rabies since 1923, and fifteen thousand treatments have been administered. Fifteen of the thirty deaths from rabies were known to have received treatment, nine are known not to have had treatment and in the case of the remaining five the history is not available. In the case of fifteen of the deaths known to have received treatment, eleven died during treatment or within fifteen days after completion of treatment. Williams¹ states that deaths occurring within fifteen days after the last treatment are considered to have been too severely infected, too susceptible, or infected with too virulent a virus to have

1. Williams, A. W.: Rabies, Billings-Forchheimer Therapeutics, New York, D. Appleton and Co., 1915.

given time for the production of immunity by the treatment. Studies² on rabies in this laboratory indicate that *street viruses* contain the same antigenic components as the *fixed viruses* used for the vaccine, but also additional factors not found in the latter. This fact would have a practical bearing on the method of human immunization, and justifies the use of a prolonged series of injections of the *fixed virus* in order to insure complete protection against the superior antigenic activity of the *street virus*.

No figures are available as to the exact number of treatments given to persons bitten by known rabid dogs. Taking all treatments administered, the mortality rate in Alabama has been 0.129 per cent. if all deaths are included except those known definitely to have received no treatment. The records of the Hygienic Laboratory at Washington, D. C., give a death rate of about 2 per cent with persons receiving treatment when there is definite history of bites by a known rabid dog.

The histories* of twenty-four of the twenty-nine deaths occurring in this State since 1923 are briefly given.

1923

L. McG. J., (F. W. 49) secured treatment for son, but failed to take it herself. She developed rabies and died September 20, 1923.

L. D. McM., (M. W. 12) was bitten on March 25, carried to Montgomery for treatment and received the first dose the following morning. The full treatment was taken with the first symptoms beginning the day after the treatment was completed. Death occurred *four* days later, April 20, 1923.

1924

S. A., (M. W. 41) was badly bitten on the forearm by a dog on July 8. Treatment was begun the next day and taken twenty-one days without interruption. Rabies developed on August 13 and death followed on August 18, *five* days later.

2. J. Infect. Dis. 51: pp. 511-518.

*The author is indebted to Dr. W. Thurber Fales of the Bureau of Vital Statistics of the State Department of Health for the histories.

A. L. H., (M. W. 14) was severely bitten about the face by a dog on October 12 and treatment was begun twenty hours later. He showed the first symptoms on the twentieth day after being bitten, this being the day for the nineteenth dose. He died on November 11, *four* days later.

1925

A. J. C., (F. W. 7) was bitten on the finger by a cat about the middle of November 1924. Nothing was thought of it at the time and treatment was not given. The first symptoms were observed about two weeks before her death, January 31, 1925.

1926

M. S., (F. C. 54) was bitten six weeks before the first symptoms developed. Death occurred March 26, 1926. Treatment was not given.

R. L. J., (F. W. 7) was bitten by a dog and began treatment about two days later. The first convulsion occurred three days after treatment was begun. The treatment was continued until two days before death, April 23, 1926.

J. D. S., (M. W. 6) was bitten by a rabid dog early in April and received treatment the following day. The full treatment was completed without interruption. Three months later, rabies developed and death followed in six days, August 30, 1926.

1927

M. B. C., (F. W. 44) gives the history of contact with a small puppy which had fits one year prior to the patient's death. The puppy died and the head was sent to the laboratory for diagnosis, but it was too decomposed for examination. Treatment was advised for all bitten, but none was taken. After the death of M. B. C., April 29, 1927, all of the other members of the family took treatment.

E. M., (F. C. 48) died May 29, 1927 of rabies. She had only four treatments before convulsions began. The doctor thought that she probably confused the date on which she was bitten and waited too late to start treatment.

C. L. H., (F. W. 47) was bitten through the wrist to the radial nerve by her dog. She began treatment the same day and completed it without interruption. She died *two* days after the last treatment December 12, 1927.

1928

E. M., (F. W. 15) was severely bitten on the hand and arm August 14 by a rabid dog. Treatment was begun August 16 and completed September 6. She first complained of pain in her arm on September 22. Paralysis developed on the 24th and death occurred September 27, 1928.

L. D., (M. W. 7) was bitten on the face by a rabid dog and treatment was begun the same day. The first symptoms were noticed the day after the last treatment, 22 days after being bitten. He died September 15, 1928, two weeks after the first symptoms.

L. B., (F. C. 42) was bitten on the back of the ear by a rabid dog. Treatment was begun six days later and twenty inoculations were given. Death occurred September 26, 1928, thirty-three days after being bitten.

1929

V. L. M., (F. W. 4) was bitten over the right eye on December 1 and began treatment five days later, finishing it December 26. She had a severe headache the day the last inoculation was given. Death occurred December 29, 1929.

1930

M. K., (M. C. 35) was bitten on the head—about a two-inch gash—on Sunday night, April 23rd, by a large dog. Treatment was begun three days later and given each successive day, except one day when it was skipped. Rabies developed about one week after treatment was completed, and death followed on May 28, 1930.

S. E., (M. C. 44) was bitten on the hand in March and received treatment immediately. There was a report that he had been bitten a second time but this could not be verified. He died of rabies July 30, 1930.

S. E., (M. C. 63), a construction laborer, was working on a bridge at the time of on-

set with convulsions. He was placed in jail and diagnosed as rabid on July 11th. He became completely paralyzed the next day and died July 13, 1930. The doctor was unable to get a history of any bite. Treatment was not given.

1931

S. P., (F. C. 6) was bitten on the left knee and chin or lips by a dog on May 6 and started treatment the next day. She finished only fourteen treatments, was taken sick on May 29 and died on June 1, 1931.

N. E. W., (F. W. 80) treated a sick dog which later died and was destroyed without being examined for rabies. At this time she had several small abrasions on her hand. Several days later symptoms of rabies developed and death followed ten days later, July 20, 1931. No treatment was given.

G. R., (M. W. 28) was bitten on September 1st by dog which he had been treating. The dog died but was not examined for rabies. His first symptoms of rabies developed on September 17 and he died three days later. No treatment was given.

1932

M. W., (F. C. 65) applied for treatment for a dog-bite about March 1st. The doctor questioned her with reference to the possibility of the dog's having rabies and advised treatment, but the patient refused treatment. On May 19, she returned to his office complaining of difficulty in swallowing. She died six days later, May 25, 1932.

B. A. T., (W. F. 3) handled a cat on October 19 which had been killed by a strange dog. The family did not think the dog rabid and none of them took treatment at this time. Two weeks later she complained of severe headaches. Her illness was diagnosed rabies. She died the following night, November 2, 1932. An autopsy was performed and the brain showed the presence of Negri bodies upon examination by the laboratory.

S. M., (M. W. 7) was severely bitten on the hand January 29th by a stray rabid dog. He began treatment the next day and

completed it without interruption. The first symptoms were noticed on April 29, about five weeks after treatment was completed. Death followed on May 3, 1933, five days from the time the first symptoms were observed. An autopsy was performed and Negri bodies were present in the brain.

BUREAU OF PREVENTABLE DISEASES

D. G. Gill, M. D., Director

A ONE-DAY SURVEY OF VENEREAL DISEASES IN JEFFERSON COUNTY, ALA.

Contributed By
Taliaferro Clark and J. D. Dowling

A survey of venereal diseases in Jefferson County, Alabama, was made on March 31, 1932 by the United States Public Health Service in cooperation with the Jefferson County health authorities and the American Social Hygiene Association. This county, situated in the central part of Alabama and having within its limits the city of Birmingham, has according to the 1930 census, a population of 431,493 of which 39 per cent are colored. There are fifteen municipalities ranging from the largest, Birmingham, with a population of 259,678, to Cardiff with a population of 146.

This survey, the twenty-ninth to be made in various localities in the United States, was conducted on the one-day census plan, and the questionnaires were sent to every physician, clinic, hospital and institution within the county limits. Data were requested as to the number of cases of syphilis and gonorrhea under treatment or observation on the date of survey, these cases to be reported by sex, color and stage of infection. Under "early" were to be included all cases of syphilis in which not more than one year had elapsed since the approximate date of infection; all others to be classed as "late". Under "acute" gonorrhea were to be included those cases in which not more than six months had elapsed since the approximate date of infection; all others to be classed as "chronic".

In addition to these prevalence data, and in order to ascertain at the same time the *incidence* of the venereal diseases, or the number of new cases occurring in a year, request also was made for the number of

previously untreated cases which came for treatment for the first time during the month preceding the survey date.

Results of the Survey—There was a 100 per cent return of the questionnaires, comprising reports from 438 physicians, 24 clinics, 12 hospitals and 10 institutions. Fifty-two per cent of the physicians reported one or more cases of venereal disease and had under treatment or observation 3,371 cases or 63.5 per cent of the total number reported. The clinics, hospitals and institutions reported the remaining 36.5 per cent of the cases.

There were 5,311 cases of venereal disease reported from all sources, 3,282 cases of syphilis and 2,029 cases of gonorrhea, resulting in a case rate of 12.3 for both infections, 7.6 for syphilis and 4.7 for gonorrhea. The male case rate for syphilis was one and one-half times as high as the female rate (9.2 and 6.0) and for gonorrhea was twice as high as the female rate (6.5 and 3.0). The case rate for the colored was more than twice the white rate for syphilis (11.7 and 5.0) but for gonorrhea the white rate was somewhat higher than that for the colored (5.1 and 4.1).

Comparison by Stage of Infection—A comparison of the prevalence rates per 1,000 for syphilis and gonorrhea by stage of infection shows that among the white males the distribution of cases in the early and late stages of syphilis is practically the same (3.0 and 3.4) and for gonorrhea the acute cases among the males were one and one-half times the number in the chronic stage (4.3 and 2.9). Among the white females the rates indicate that the number of syphilis cases in the late stage was one and one-half times the number in the early stage of infection, (2.2 and 1.4) while for gonorrhea the proportion was slightly higher in the acute stage (1.6 and 1.4).

The results of a similar comparison of the case rates for syphilis among colored of both sexes are much more pronounced and indicate that the males had four and one-half times as many cases in the late stage as in the early (11.3 and 2.5) and that the females had five and one-half times as many cases in the late stages as were found in the early stage of infection (8.2 and 1.5). For gonorrhea the rate was only slightly higher in the chronic stage for the colored males,

but was almost twice as high for the colored females.

Cases in Private Practice and in Public Clinics—As stated above 63.5 per cent of all the cases reported were under the care of private physicians, the remaining 36.5 per cent being reported by the 26 clinics, hospitals and institutions which had cases of venereal diseases under treatment or observation on the survey date.

Among the males 57 per cent of those patients with syphilis and 77 per cent with gonorrhea were under the care of private physicians. The syphilitic females were equally distributed between private practice and public clinics, but 84 per cent of the female gonorrhea cases were under private care. The white males as well as the white females had a much higher proportion of both syphilis and gonorrhea cases under private care than had the colored males or females.

Comparison with Other Localities—A comparison of the prevalence rates per 1,000 white and colored populations for syphilis and gonorrhea combined is shown in the tabulation below. Only Baltimore, Knoxville, New Orleans and Wheeling have lower rates for the whites than has Jefferson County, which, with the exception of Knoxville, has the lowest colored rate in the group.

Prevalence Rate Per 1,000 White and Colored Populations For Syphilis and Gonorrhea Combined, In Selected Localities in the United States.

Locality	Rate per 1,000 Population	
	White	Colored
Localities in Alabama		
Jefferson County	10.1	15.8
Birmingham (including Ensley)	14.0	20.0
Other cities over 100,000 population		
Baltimore, Md.	7.5	40.4
Knoxville, Tenn.	8.7	12.1
New Orleans, La.	9.9	19.7
Nashville, Tenn.	12.9	29.6
St. Louis, Mo.	14.5	28.2
Memphis, Tenn.	17.0	24.6
Smaller cities		
Wheeling, W. Va. (resurvey)	9.9*
Petersburg, Va.	11.1	36.5
Huntington, W. Va. (resurvey)	12.7*
Chattanooga, Tenn.	17.7	23.5
Charleston, W. Va.	28.1	29.9

*Total prevalence rate; data for white and colored separately are not available.

Incidence—The annual incidence, or the number of new cases occurring in one year, is based on the number of new cases which had never before received treatment from an authorized medical source, and which came for treatment for the first time during the month preceding the one-day census.

The annual incidence rates per 1,000 population for Jefferson County, are 45.0 for syphilis and gonorrhea combined, 21.3 for syphilis alone and 23.7 for gonorrhea. The syphilis rates for both the colored males and the colored females were very much higher than those for the whites of both sexes, but for gonorrhea the rate for the white males is considerably higher than that for colored males, while the female rate is slightly higher for the colored than for the white population.

Birmingham (including Ensley), Alabama—To afford a comparison with other large cities, prevalence and incidence rates were obtained for Birmingham, exclusive of the rest of Jefferson County. Birmingham with a population of 259,678 was found to have a prevalence rate per 1,000 of 16.2 for syphilis and gonorrhea combined, 10.4 for syphilis and 5.8 for gonorrhea, all considerably higher than for the county as a whole.

The incidence rates for Birmingham are 56.8 for both infections, 28.3 for syphilis and 28.5 for gonorrhea.

BUREAU OF VITAL STATISTICS

W. T. Fales, Director

ACCURATE VITAL STATISTICS A NECESSITY

The science of meteorology has been greatly stimulated by present day need for up-to-minute information on atmospheric conditions in aviation and exploring expeditions. In the present attempt to scale the summit of the world's highest mountain, Mt. Everest, hourly forecasts of the weather are wirelessly to the base camps of the expedition.

Of no less importance to the science of preventive medicine is a knowledge of the occurrence of communicable diseases and complete registration of births and deaths. The county or city health officer cannot initiate prompt and effective measures for the

control of typhoid fever or diphtheria unless he is notified of the occurrence of a case immediately. Nor can the public health nurse perform her duties as "the messenger of public health" without prompt registration of births and deaths.

The first six months of 1933 have passed. The number of births and deaths reported will probably fall considerably below the number registered for the same period of 1932. So far as this reduction reflects a lowered mortality and a lower birth rate, well and good. However, house to house checks of the reports of births, check of deaths under one year of age back against births, checks of newspaper announcements of births and deaths, all point to the fact that not more than nine out of every ten births or deaths are reported. Monthly checks of deaths from communicable diseases, such as typhoid or diphtheria, reveal constantly that only about seventy-five per cent, at the most, of these diseases are reported. Several studies of deaths from tuberculosis have shown that the case had been reported in a vast majority of instances only a month or so before death. These factors would all indicate that the importance of reporting is by no means well appreciated by a large number of physicians.

Even though parents and families are vitally interested in seeing that every birth and death in Alabama is registered, the physicians have a still greater interest in complete registration. Morbidity and death rates are used by health officers and the medical profession in determining the importance of many morbid conditions and in measuring the advance in control and treatment of these conditions. As a science, vital statistics is relatively new. Only during the last fifteen years has there been any considerable amount of critical treatment of causes of death, resident death rates, etc. Such refinements, however, will come to naught unless the original are complete and accurate.

Physicians of Alabama are largely responsible for this accuracy and completeness. In the first place, they deliver more than sixty-six per cent of all births in the State. In all deaths where there was a medical attendant, the physician is responsible for the accurate and complete state-

ment of the cause of death. In a recent study of maternal deaths in Jefferson County, investigation showed that twenty-eight out of 158 deaths would not have been allocated to maternal causes if complete and accurate statement of the cause of death had been given on the death certificate. On physicians, therefore, rests a tremendous responsibility for the value and usefulness of our vital statistics.

Reportable diseases are to be reported by the regular return of a special postcard mailed to every physician weekly. This system would insure complete registration of all communicable diseases seen by physicians if followed conscientiously by all practitioners.

Every doctor must appreciate this responsibility to the public and to the profession. The vital statistician cannot make his figures more accurate than the original data. Careless or hurried filling out of communicable disease reports, birth certificates, and medical certifications of cause of death must cease. To assure up-to-date current knowledge of health conditions, there must be:

(1) Immediate reporting of all births attended by doctors during the first half of this year.

(2) Regular and prompt reporting of births during the remainder of the year.

(3) Regular and complete reporting of communicable diseases on the weekly report card.

(4) Complete and accurate certification of causes of death.

W. T. F.

* * *

THE PUBLIC HEALTH NURSE AND VITAL STATISTICS

The public health nurse is appreciating more and more the fact that an effective program cannot be planned without the knowledge that vital statistics can give her. Hence she is concerning herself more than ever with the prompt and complete reporting of births, stillbirths and deaths.

Due to her large territory and various activities the nurse is unable to see her prenatal cases more than once or twice a month. Save for prompt registration, the infant might be almost a month old before the nurse learns of his birth at her next

visit, and the chances of teaching correct habit formation in the baby are lessened.

The benefit and comfort to the mother that can be gained only through actual demonstration of postpartum care is lost if the birth is not registered and the nurse thus notified in time to give this care.

The public health nurse attempts to investigate all stillbirths delivered by midwives. The more promptly this is done the more accurate the information obtained and thus a valuable check is kept on the work of the midwives. It is only through such investigations that undesirable midwives can be eliminated.

Too often tuberculosis is unknown to the health department until a death certificate comes in. If the filing of this certificate is delayed several months after the death occurs, the chances for constructive work that a visit to the contacts immediately after the death of the case might have accomplished are greatly diminished.

Acting on the results of studies made of the cases of and deaths from diphtheria, the nurse is able to concentrate on immunizing the age group that is most affected.

The nurse cannot spend time on individual certificates except incidental to her home visits. All efforts toward better and prompter registration must necessarily be directed toward those whose duty it is to make such reports, namely, registrars, coffin dealers, hospitals, physicians, midwives and parents. Such efforts take the form of systematic work with the registrars; of occasional reminders to the physicians; of rigid requirements of the midwives; and of giving publicity to the subject in home visits and group meetings. When these things are done the nurse may help attain the goal of "Every Birth and Every Death in Alabama REGISTERED!" C. C.

BUREAU OF SANITATION

G. H. Hazlehurst, Director

TYPES AND SOURCES OF MOSQUITOES MOST COMMON IN ALABAMA

There are three major types of mosquitoes in Alabama which are of concern to man either as a pest or vector of disease.

The anopheles is the most important species. The *Anopheles quadrimaculatus* is practically the sole vector of malaria in

Alabama. This mosquito readily enters houses but bites only at night. Its flight is upward of 1¼ miles. It produces principally in permanent natural or artificial ponded water well grown up with vegetation or covered with flottage. The crucian and punctipennis of this species, though capable of transmitting malaria, do not actually do so to any extent due either to their distribution or feeding habits. They produce along with quadrimaculatus but the typical breeding place of crucians is acid swamp water, and punctipennis the cold water found in springs or spring-fed branches.

A second species is the culex. It might be termed the "domestic" group and includes the *Culex quinquefasciatus* or common house mosquito of the South. Another and less important mosquito of this species is the *C. restuans*. Both types are quite similar in habit. They produce to some extent in artificial water containers but heavy production often takes place in streams polluted with organic matter, as sewage. The flight range of *C. quinquefasciatus* is upward of two miles. They readily enter houses and have the "singing" habit strongly developed but rarely bite except at night.

A third species is the aedes. The most important of this group is the *Aedes aegypti* which is purely a domestic mosquito producing only in artificial water containers in and about human habitation. The adults are the only common day light biting mosquito found inland with the exception of *Psorophora ferox*. They do not sing and their flight is weak but their bite causes intense burning and swelling. Formerly this mosquito transmitted both yellow and dengue fever but now it is known only as a pest mosquito as no cases of either disease have been reported in Alabama in a number of years. The *Aedes aegypti* is commonly known as the stegomyia mosquito.

There is another mosquito of this group known as *Aedes triseriatus*. It produces principally in water contained in tree holes. It has been known to cause a considerable nuisance in areas where there are numerous breeding places with sufficient rainfall occurring to keep these holes filled with water.

There are a number of other mosquitoes of less importance which are occasionally

encountered in municipal mosquito control work. Probably the most important is *Psorophora sayi*, a woodland mosquito which produces in woods' pools. Usually two crops are produced each season, one in the spring and another in the fall. It will attack viciously in the day time when its native haunts, the woods, are invaded. Occasionally this mosquito will be carried by wind currents into neighboring towns where it persists for a week or so to give trouble in the shade of porches and garden vegetation. In the salt marsh area a typical mosquito is the *Aedes sollicitans*. It breeds exclusively in the salt marshes but under favorable wind conditions it travels many miles inland.

C. C. K.

Note:—Measures for controlling the different types of mosquitoes discussed in the above article will be given in the next issue of this Journal.

CURRENT STATISTICS

*PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA

	April	May	Estimated Expectancy
			May
Typhoid	26	22	44
Typhus	15	35	1
Malaria	39	76	201
Smallpox	8	23	56
Measles	393	431	953
Scarlet fever	43	33	38
Whooping cough	192	225	178
Diphtheria	49	25	38
Influenza	202	66	187
Mumps	167	166	102
Poliomyelitis	2	1	3
Encephalitis	8	5	3
Chickenpox	73	68	166
Tetanus	6	2	3
Tuberculosis	308	220	339
Pellagra	62	55	113
Meningitis	5	3	4
Pneumonia	321	110	242
Syphilis (private cases)	169	172	163
Chancroid (private cases)	2	2	9
Gonorrhea (private cases)	116	100	180
Ophthalmia neonatorum	0	1	2
Trachoma	2	1	0
Tularemia	0	0	2
Undulant fever	0	0	3
Dengue	0	0	1
Rabies	0	0	0

*As reported by physicians and including deaths not reported as cases.

The Estimated Expectancy represents the median incidence of the past nine years.

PROVISIONAL MORTALITY STATISTICS

Alabama, April 1933

CAUSE	Number of Deaths Registered April 1933			Annual Rate per 100,000 Population		
	White	Colored	Total	April 1933	April 1932	April 1931
ALL CAUSES	1212	938	2200	976.6	1015.0	1185.4
Typhoid fever	3	2	5	2.2	3.6	3.2
Smallpox						
Measles	2		2	0.9		18.5

Scarlet fever	4		4	1.8	0.9	0.9
Whooping cough	10	2	12	5.3	5.4	1.8
Diphtheria	5	1	6	2.7	3.6	2.7
Influenza	41	36	77	34.2	60.7	79.3
Pneumonia, all forms	90	83	173	76.8	93.1	124.2
Poliomyelitis	2		2	0.9		0.4
Tetanus	3	3	6	2.7	3.1	
Tuberculosis, all forms	61	105	166	73.7	81.4	120.0
Tuberculosis, pulmonary	58	92	150	66.6	72.9	93.9
Malaria	2	1	3	1.3	3.1	3.6
Cancer, all forms	96	27	123	54.6	49.9	54.9
Diabetes mellitus	11	6	17	7.5	7.2	7.7
Pellagra	19	14	33	14.6	12.1	18.6
Cerebral hemorrhage, apoplexy	80	48	128	56.8	65.2	57.0
Diseases of heart	183	105	288	127.8	75.5	122.0
Diarrhea and enteritis, Under 2 years	10	7	17	7.5	9.0	5.4
2 years and over	3	2	5	2.2	4.9	3.2
Nephritis	119	87	206	91.4	88.2	97.5
Puerperal state, total	17	19	36	16.0	16.2	21.8
Puerperal septicemia	3	4	7	3.1	1.3	4.1
Congenital malformations	11	5	16	7.1	4.9	9.5
Congenital debility and other diseases of early infancy	66	35	101	44.8	52.6	55.3
Senility	14	14	28	12.4	16.2	19.9
Suicides	14		14	6.2	7.6	11.8
Homicides	19	26	45	27.0	15.7	26.7
Accidental burns	7	5	12	5.3	4.5	8.6
Accidental drownings	4	5	9	4.0	4.5	4.1
Accidental traumatism by firearms	5	2	7	3.1	3.6	2.7
Mine accidents					0.9	0.9
Railroad accidents	5	4	9	4.0	1.8	2.3
Automobile accidents	26	9	35	15.5	13.5	15.0
Other external causes	25	13	43	19.1	35.1	20.9
Other specified causes	184	145	329	146.0	135.4	166.0
Ill-defined and unknown causes	71	172	243	107.9	103.0	116.0

Book Abstracts and Reviews

Obstetrics and Gynecology, Volume I: By 80 leading specialists. Edited by Arthur Hale Curtis, M. D., Professor and Head of the Department of Obstetrics and Gynecology, Northwestern University Medical School; Chief of the Gynecologic Service, Passavant Memorial Hospital, Chicago, Ill. Complete in 3 volumes and separate desk index. 3,500 pages with 1,664 illustrations, many in colors. Philadelphia and London: W. B. Saunders Company, 1933. Per set, Cloth \$35.00 net.

The outstanding excellence of DeLee's Obstetrics would have discouraged almost any publisher from undertaking to put out another book on the same subject, but Saunders has done many unusual things before and will probably do so in the future. Perhaps they were encouraged into undertaking this task because of the great success of the little volume on gynecology which Doctor Hale wrote a year or so ago. At any rate, Doctor Hale has undertaken a much larger task than his last one—the task of gathering from over 80 outstanding teachers of obstetrics and gynecology in leading American medical schools contributions to a three-volume set covering the entire field of obstetrics and gynecology. The list of contributors is most impressive. Their contributions are equally impressive.

The first volume covers part of the subject of obstetrics. The general scheme of presentation is that usually seen in our text-books. The chapters on "Diagnosis of Pregnancy" and the "Management of Normal Pregnancy" are quite good. There are some interesting notes on the relation of vitamins to pregnancy. The introductory chapter on the history of obstetrics is very fascinating, being profusely illustrated with engravings and quotations from old medical texts. Novak's chapter on "Menstruation in the Light of the Newer Knowledge" correlates the phenomena of menstruation with the knowledge of sex hormonology gained in

the laboratory. Hartman's chapter on "The Reproductive Cycle in Animals" is a valuable source of information for those doing experimental work on reproduction in lower animals. An extensive bibliography opens up the possibility of even more interesting reading. Novak and Long have written a rather brief chapter on "Sexual Intercourse"—an innovation in texts on obstetrics and gynecology, though, as Novak says this function is really the *raison d'être* for the former science and an important contributory factor in the latter.

If the second and third volumes prove as well done as the first, editor, contributors and publisher will be entitled to great praise.

C. K. W.

Surgical Pathology: By William Boyd, M. D., M. R. C. P. Ed., F. R. C. P. Lond., Dipl. Psych., F. R. S. C., Professor of Pathology, University of Manitoba; Pathologist to the Winnipeg General Hospital, Winnipeg, Canada. Third edition, thoroughly revised. 866 pages with 477 illustrations and 13 colored plates. Philadelphia and London: W. B. Saunders Company, 1933. Cloth \$10.00 net.

A good text-book of surgical pathology deserves a place on the bookshelf of every surgeon, pathologist and internist. The market has never been flooded with good books on this subject. Boyd's book has filled a definite need. This last edition adds little to the subject matter though the book has been brought up to date. It is brief, concise, didactic, practical, lacking perfection, perhaps, only in its brevity and lack of detail. Its illustrations are good. Its brevity should appeal to the student and the busy practitioner. Among the sections which have been revised or rewritten are "Bloody Discharge from the Nipple", "Theories of the Origin of Tumors", "Fat Embolism", "Diseases of the Tongue", "Paget's Disease of the Breast", and "The Etiology of Chronic Arthritis".

C. K. W.

Truth About Medicines

PROPAGANDA FOR REFORM

Annual Meeting of the Council on Pharmacy and Chemistry.—The following were among the subjects considered at the annual meeting of the Council on Pharmacy and Chemistry of the American Medical Association: The Council adopted as a general policy the principle that the proprietor of a product which may be both a food and a drug be entitled to the use of only one seal on a package; that the seal of the Committee on Foods be the seal recommended, and that if the seal of the Council on Pharmacy and Chemistry is desired, special consideration in each instance must be given by the Council. The Council went on record as being opposed to advertisements of

accepted products in packages of non-accepted products. The Council objected to the use of the Bayer Cross by the Winthrop Chemical Company on labels of Council-accepted products, as the use of the Bayer Cross is a means of promoting the advertising of the non-accepted Bayer Aspirin. The Council requested the Secretary to call to the attention of firms marketing carotene the fact that there may be disadvantages in the large doses of carotene which have been recommended. The Council reaffirmed its opposition to the use of the term "anti-infective" in reference to vitamin A. It offered no objection to a variable ratio in the contents of vitamins A and D in new commercial products such as halibut liver oil plus viosterol, and similar mixtures of vitamins A and D. The Council voted that in case of tablets and similar preparations of concentrates containing vitamins A and D, firms be permitted to label these products as follows: Vitamins A and D Concentrates; with the understanding that the label should also contain a statement of the source of the vitamins and the units of A and D from each source. The Council decided that the policy be continued of requiring firms to label liver extracts with a statement to the effect that a given amount of the product is equivalent in antianemic potency to that of a certain amount of fresh liver. The Council decided that the matter of the rationality of combinations of iron salts and liver extracts be held in abeyance until further evidence of the comparative value of simultaneous administration is forthcoming. It decided that in view of the lack of specific evidence of the value, in man, of combinations of copper and iron, the Council will not for the present accept combinations containing copper and iron. The Council feels that the issuance of the copper-iron patent of the Wisconsin Alumni Research Foundation was unfortunate; that the government should not have issued the patent; and that the criticism of the Foundation is that it has patented and collected royalties on a product which in the opinion of the Council is of no originality and no established merit. The Council felt that the firm which makes an important development in a line of medications such as, for instance, Sucrets or Dulcets for certain types of candy medication, may have a pro-

proprietary name or distinctive brand name, but other firms should conform to a common nonproprietary designation for their respective lines. The Council voted that the U. S. Food and Drug Administration methods of testing antiseptics and disinfectants, as stated in Circular No. 198, U. S. Department of Agriculture, be adopted by the Council under the same conditions as those relating to the previous adoption of the U. S. Public Health Service method of standardization of antiseptics and disinfectants. It was voted that the Council consider the available data for the antiseptic efficiency of gargles as unsatisfactory and, until acceptable proof is brought forth, that the Council do not allow claims of therapeutic usefulness or prophylactic action of gargles. It was decided that reports or other evidence emanating from commercial laboratories which do not enjoy the full confidence of the Council and dealing with articles under consideration by the Council must be confirmed by independent data of an acceptable character; it was also decided that reports from laboratories must be signed by a reputable, qualified worker who is personally responsible for the report and the recommendations contained therein. (Jour. A. M. A., May 6, 1933, p. 1402.)

Calcium Peroxide—R. & H.; Oxone; Sodium Dioxide Dental—R. & H. and Sodium Peroxide—R. & H. Omitted from N. N. R.—The Council on Pharmacy and Chemistry reports that the period for which these products of the Roessler & Hasslacher Chemical Co., Inc., were accepted, expired with the close of 1930. When requested, at that time, to submit the current advertising for the products, the firm sent a booklet which makes reference to products which do not stand accepted for New and Nonofficial Remedies. The firm was informed that this constitutes a conflict with the Council's rule concerning the use of an accepted product to advertise unaccepted products. The firm made no reply at this time and failed to reply to a similar request in 1931. In view of the firm's failure to cooperate, the Council omitted Calcium Peroxide—R. & H., Oxone, Sodium Dioxide Dental—R. & H. and Sodium Peroxide—R. & H. from New and Nonofficial Remedies. (Jour. A. M. A., April 22, 1933, p. 1237.)

PHYSICAL THERAPY

Diathermy.—The Council on Physical Therapy in a preliminary statement reports that diathermy is the therapeutic use of a high-frequency electric current to generate heat within some part of the body. For want of better terminology, diathermy may be divided into two divisions: medical diathermy and surgical diathermy. Medical diathermy is contraindicated (1) in acute inflammatory processes such as acute non-draining cellulitis, acute arthritis characterized by infection, and acute pelvic infection; (2) in any condition in which there is a tendency to hemorrhage, such as a gastric ulcer, and (3) in those areas in which the appreciation of heat has been impaired or lost, as in certain peripheral nerve injuries. It is also contraindicated in diseases or injuries in which simpler methods of applying external heat give satisfactory results. The advantages of electro-surgery lie in effective destruction in loco of tissues that it is desirable to eliminate. This manifestly includes many forms of malignancy. (Jour. A. M. A., June 17, 1933, p. 1933.)

Acceptance of Sunlamps.—The Council on Physical Therapy reports on the stand it has taken in reference to the acceptance of sunlamps. In order that it may better understand the problems confronting the Council the attention of the profession is called to the following: A. The Council on Physical Therapy definitely withholds acceptance of the postulatory principle of dual-purpose lighting, because it is highly theoretical and the promulgators of this idea have not presented acceptable clinical evidence to the Council substantiating its therapeutic or prophylactic value. B. The Council on Physical Therapy declines to accept sunlamps if the manufacturer fails to state in all advertising matter and descriptive literature the distance between the lamp and the recipient required to equal the intensity of midday, midsummer, midlatitude, sea level, natural sunlight. C. The manufacturers of acceptable sunlamps for home use have agreed to discontinue objectionable claims such as that exposure to ultraviolet rays increases or improves the tone of the tissues or of the body as a whole, stimulates metabolism, acts as a tonic, increases mental activity, maintains health, or tends to prevent colds, because these claims have not been conclusively substantiated by experimental evidence. D. Until further evidence is presented to prove otherwise, the Council declares that the erythema test is the only means of determining whether appreciable ultraviolet is emitted by the source. (Jour. A. M. A., June 10, 1933, p. 1863.)

Miscellany

ADVERTISERS' NOTES

BORDEN'S EVAPORATED MILK

Numerous impartial clinical studies during the past three or four years have demonstrated that a standard evaporated milk such as Borden's has certain definite advantages in infant feeding. The ease of digestion, uniformity, sterility, and high nutritive qualities of this form of pure milk are favorable properties that tend to make it particularly well suited for the infant feeding formula as prescribed by the physician.

As pointed out by Dr. James A. Tobey in a recent scientific article (Archives of Pediatrics—March 1933) approximately twenty-eight hundred (2,800) babies have been included since 1929 in more than a dozen independent clinical investigations on the use of evaporated milk. No adverse findings were reported by any of these observers, who employed evaporated milk for pre-matures and the new-born, for marasmic infants, and for the routine feeding of normal, well babies. In all instances good results were obtained.

Borden's Evaporated Milk was the first product of this type to be accepted by the Committee on Foods of the American Medical Association. It has been manufactured for more than thirty years by a company that is well known as the leading milk concern in the United States and as the pioneer in the production of clean and safe milk supplies. Many of the sanitary regulations promulgated half a century ago by Gail Borden, founder of the Borden Company, were subsequently adopted by health departments and served as the basis of official milk codes.

* * *

VIOSTEROL

Ever since viosterol was offered to the medical profession about four years ago, it has been attacked by various persons. Some of these attacks no doubt were sincerely motivated, but others were seized upon and exaggerated by interests who had no viosterol to sell.

Recently a new form of anti-viosterol propaganda has been reported by physicians all over the country. It is circulated

by word of mouth—never in writing—and the apparent purpose is to influence physicians to prescribe Vitamin D agencies other than viosterol.

Physicians are being told, for example, that Dr. Harry Steenbock has "condemned" viosterol, that the Wisconsin Alumni Research Foundation "would withdraw viosterol from the market in 90 days," etc., etc.

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"Viosterol in its various forms has to date been found fully as valuable in medical practice as was anticipated at the time that it was first introduced to the American markets. Up to the present time there have been no reports of any untoward effects from its administration, although originally it was anticipated from the results of animal experiments that some cases of intoxication might result from its use in human medicine. . . . I see no necessity for reversing my original opinion as to its outstanding merits in any way whatsoever. Any statement to the contrary can be definitely labeled as false." (Signed) H. Steenbock.

Physicians can draw their own conclusions and form their own opinions of any house that resorts to sharp practices by allowing its representatives to spread unfounded whispering campaigns against a valuable therapeutic agent that has endured four years of the most searching experimental investigation and clinical use not only in rickets but also for controlling calcium-phosphorus metabolism generally.

* * *

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Proper diet means *adequate, well-balanced nourishment.* Not over-eating, for that disturbs digestion, causes sleeplessness and further complicates the condition.

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Cocomalt mixed with milk is especially useful in pregnancy and lactation, in illness and convalescence, and for underweight, malnourished children.

* * *

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Mead Johnson & Co. are now marketing Mead's Cereal in dried pre-cooked form, ready to serve, under the name of Pablum. This product combines all of the outstanding mineral and vitamin advantages of Mead's Cereal with great ease of preparation.

All the mother has to do to prepare Pablum is to measure the prescribed amount directly into the baby's cereal bowl and add previously boiled milk, water or milk-and-water, stirring with a fork. It may be served hot or cold and for older children and adults cream and sugar may be added as desired.

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THE NATURE AND COURSE OF BRIGHT'S DISEASE*

by

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Birmingham, Ala.

To correlate symptoms with pathology and, on the basis of both, to build a classification of disease is difficult. This has been especially true in Bright's disease. From two sources, however, have come in recent years thoroughly satisfactory classifications which, while differing in terminology, are in actual content identical. The German workers, Volhard and Fahr, and the American clinician, Addis, have based their classifications primarily on the tissue changes of the kidney, but have related these pathologic processes to the clinical manifestations in such a manner that the physician finds little difficulty in placing each case in its appropriate category. The classification is simple; using the terminology of Volhard and Fahr, with the terms of Addis in parenthesis, all forms of Bright's disease can be divided into three groups:

- (1) Glomerular nephritis (hemorrhagic nephritis);
- (2) Nephrosclerosis (arteriosclerotic Bright's disease);
- (3) Nephrosis (degenerative Bright's disease).

The first of these, glomerular or hemorrhagic nephritis, is a true inflammatory disease which involves primarily the glomeruli. In its acute stage it is the familiar type of acute nephritis which follows scarlet fever, tonsillitis, and other streptococcic infections. Its salient features are edema and arterial hypertension with albuminuria, cylinduria and hematuria. The bloody

urine, which is a characteristic feature of the disease, may be constant or intermittent. It should be added, however, that the intensity of the hematuria, which may be so slight as to be detectable only with the microscope or so marked as to give the urine a bright red color, tells little of the severity of the infection. As a diagnostic symptom hematuria is of distinct importance, but as a prognostic sign it is of no value. The edema develops quickly, and as the disease advances the patient becomes markedly anemic. The ability of the kidney to deal with urea, as shown by the urea clearance test, becomes seriously impaired. The great loss of albumen in the urine and the destructive action of bacterial toxins upon tissue proteins, if uncompensated, result in a lowering of blood proteins, and finally in a significant plasma protein deficit.

This deficit in the protein content of the blood is of great importance from both a prognostic and a therapeutic standpoint, for if permitted to persist it has a definite influence upon the course of the disease. Van Slyke and his associates found that if the protein loss can be made good by means of an adequate diet, and the plasma proteins thus maintained at approximately the normal level, the patient with glomerular nephritis will probably recover, but that if a protein deficit is permitted to persist then the disease is much more likely to become chronic or to pursue a downward course. The lesson is obvious.

The course of this disease, as was shown in the Rockefeller studies, may follow any one of several pathways. It may in a short time end in complete recovery; or, it may proceed in an opposite direction and in a few weeks or months terminate in uremia. Not infrequently, however, after a variable period, the dominant symptoms subside and the disease passes into the so-called latent stage. For the physician this is the stage

*Part 1 of a symposium on Bright's disease.

*Read to the Association in annual session, Montgomery, April 19, 1933.

of uncertainty. The patient has as a rule no symptoms, his sense of well-being is unimpaired, his blood pressure is normal, and he appears well. There remains merely a little albumen in the urine with a few casts and an occasional red blood cell. These appearances may persist for months and even years. The physician ponders the significance of the persisting albuminuria and asks himself, is it of serious moment? He may be tempted after a time to conclude that the albuminuria and slight hematuria are, after all, of no significance; but in this he is apt to err, for, while such a patient may remain indefinitely in the latent stage, he may, on the other hand go into the active chronic stage and eventually die of uremia. This was well illustrated by the following case:

A young college student came to me because of headaches and easy exhaustion. He told of repeated attacks of tonsillitis in childhood and of an illness at twelve years which was accompanied by general edema. In the intervening ten years he had apparently been in good health and when I first saw him, although he was extremely pale, he felt fairly well and was active in his college work. He showed an abundance of albumen and casts with a few red blood cells in the urine, and had recently developed a little edema. The blood pressure was markedly elevated. His phthalein output was extremely low and both blood urea and blood creatinin gave alarmingly high figures. It was evident that he was hovering on the brink of disaster; four weeks later he died. After reviewing this patient's history I think it fair to assume that ten years ago he had an acute glomerular nephritis following tonsillitis and that although, apparently in good health, he actually had during these intervening years a latent nephritis which finally progressed to the active chronic stage and then terminated in uremia. The lesson we can draw from this case is that the persistence of a glomerular nephritis in its latent form, even though there are no symptoms, should be looked upon with concern.

The second disease of this classification, nephrosclerosis, or according to the terminology of Addis, arteriosclerotic Bright's

disease, is not a true nephritis. It is first and foremost a disease of the arteries, and it is only when the vascular changes become pronounced that impairment of kidney function supervenes. Arterial hypertension is an early and constant feature; the heart is often enlarged, and, as the disease advances, myocardial failure may dominate the picture. The urine is of low specific gravity and contains variable, usually small, amounts of albumen; there are a few casts in the urine but no red blood cells. The urea clearance is low, not because of any primary destruction of the glomeruli but because the restricted circulation impairs kidney function.

The course of this disease covers not weeks, or months, but years and decades, and it can best be influenced by attention to the patient himself rather than to his kidneys. This is accomplished not by the unnecessarily rigid food restriction commonly in vogue but by prescribing a diet which will best promote strength and vigor over the longest period of years. It is characteristic of nephrosclerosis that, while it may end in uremia, this is not its usual course. More often some circulatory disaster such as myocardial failure, coronary occlusion, or apoplexy is the terminal episode.

Mention should also be made of a special type of nephrosclerosis, the malignant form, which pursues an entirely different course. This is truly a malignant disease; its fatal course is brief and stormy. Its precise nature is not definitely known but it possibly represents, as was suggested by Fahr, a mixture of two pathologic processes; first of all a true arteriosclerotic disease and secondly a superimposed inflammatory process such as occurs in glomerular nephritis. This last determines its course.

The third disease of this grouping, nephrosis, is a degenerative rather than inflammatory nephropathy, as is indicated by the designation proposed by Addis, degenerative Bright's disease. This degenerative process attacks the glomeruli and tubules; the blood vessels escape. Nephrosis may be the result of any one of a great variety of infections or intoxications: syphilis, osteomyelitis, tuberculosis, or pregnancy; or it may begin insidiously without evidence of previous disease. Its salient

clinical features are heavy albuminuria and massive edema. There is no urea retention and the patient does not as a rule exhibit the anemia seen in other forms of Bright's disease. The blood pressure is normal and there are no red blood cells in the urine. This absence in nephrosis of the four salient features of glomerular nephritis—urea retention, hematuria, anemia and arterial hypertension—will serve to distinguish the former from the chronic stage of the latter. The loss of large quantities of albumen in the urine leads to a marked protein deficit of the blood which deficit is responsible in part for the edema and the chronicity of the disease.

The course of nephrosis may eventually lead to complete recovery, but as a rule its long continued progress is downward. If this downward tendency is to be checked and the course of the disease altered, the protein loss in the urine must be made good. This can be accomplished, sometimes in a graphic manner, by means of diet high in protein.

Lipoid nephrosis is the term used to describe a form of the disease in which the epithelial cells exhibit an "intense fatty and hyaline droplet degeneration". The presence of these refractile lipid bodies in the urine and the marked deficit in the plasma albumen, with a relative increase in the globulin fraction, are thought by some, notably by Epstein, to mark this disorder as a distinct disease entity. In fact the suggestion has been made that this is not a true kidney disease but is a more deep seated disorder of protein metabolism. Others agree with Christian that lipoid nephrosis is entitled to no such distinction but is identical with the disease described above.

By means of this classification of Bright's disease, order has been brought out of confusion. Symptoms have been related in a very satisfactory manner to pathology and our understanding of the disease greatly clarified.

The Pediatrician and Preventive Medicine—Preventive medicine is the great field of the pediatrician, and in this field we can do our greatest good toward the future generations in keeping our patients well by frequent, thorough, and intelligent physical examinations, begun at birth and not discontinued when the child goes to school, but continued at regular intervals through adolescence.—*Burdick, Virginia M. Monthly, August 1933.*

BRIGHT'S DISEASE

GRADES OF SEVERITY: EVALUATION: OUTLOOK*

MONROE A. MAAS
Selma, Ala.

In the evaluation of nephritis, I wish to take up the simple and most valuable tests that help us in the diagnosis and prognosis of the disease. Our information comes from the chemical and microscopic examination of the urine, and through the functional tests. The twenty-four hour amount of urine should be measured and recorded, and this information is more valuable if we also know the amount of fluid intake. The important thing to know is whether there is a normal balance between fluid intake and urine output. The output should be two-thirds to three-fourths of the fluid intake, but of course varies with temperature conditions and whether or not much fluid is gotten rid of by the skin.

In considering the question of prognosis and the tests of renal function we must remember that no one test by itself is sufficient, and that repetition of the same test from time to time gives us much more accurate information. We must also remember that in the presence of an acute nephritis there is always the possibility that degeneration will cease and repair take place to such an extent that the patient may change markedly or even recover.

First, of course, we have our routine urinalysis, which gives us information about the specific gravity and the amount of albumen and casts, which can be watched from day to day.

The two-hour renal test is the test for early diagnosis of chronic nephritis. It is a simple test, with the principle involved of the "test of effort", that is after a diet that causes considerable renal work. Without altering his daily routine of diet, the patient is directed to void every two hours during the day, measure the amount and collect a specimen. The night urine is saved in one lot from three hours after the evening meal until next morning—the amount being measured. In the normal individual there will be found a variability of function. The specimens which come

*Part 2 of a symposium on the subject.

*Read to the Association in annual session, Montgomery, April 19, 1933.

closest after meals will contain the water from the meals, to which the kidney is very sensitive, and hence will be larger in amount and low in specific gravity. The specimen before the next meal will be small in amount and high in specific gravity due to the nitrogen of the meal now being excreted. The night urine will average four hundred cc. and will have a specific gravity of about 1.018. The different specimens will have a variation of specific gravities of seven to ten points and one specimen will be 1.020 or over. The patient will not have to arise at night because the kidney can complete its work in response to meals and provide itself with a rest period at night. An increase of the night volume beyond six hundred cc. together with a lowering of its specific gravity below 1.018 and a general tendency of the specific gravity to remain below this level and more or less fixed, is a definite indication of chronic nephritis.

The phenolsulphonphthalein test gives us information concerning the epithelial cells, and anything above 40% in two hours should be considered normal. It is of value especially in conjunction with the urea test, and by frequent tests we may determine whether the function of the kidney is getting better or getting worse. In prostatic cases with back pressure on the kidneys, we can watch the improvement by this test after satisfactory drainage has been done.

Blood urea nitrogen is of considerable importance in prognosis. A level of urea nitrogen under forty or fifty mgm. per 100 cc. of blood is of little value in estimating the prognosis of a given case. A level between fifty and seventy-five mgm., especially if the general tendency is upwards, is of bad prognosis. If, under proper dietetic treatment, the level of urea nitrogen cannot be depressed below fifty mgm. the diagnosis is definitely poor. Above seventy-five mgm. the prognosis is as a rule very poor. The greatest usefulness of the blood urea nitrogen is in conjunction with the 'phthalein test. These tests should be done once a week. The combined curves of these two tests from week to week give us more information than either alone, in the severe cases with renal insufficiency.

The normal value of creatinin is one to two mgm. per 100 cc. As it rises, the prog-

nosis becomes progressively worse, and volumes over five per 100 cc. are usually followed by a fatal issue within four months.

Van Slyke used the urea clearance as the measure of functional ability. It has long been recognized that urea retention is characteristic of renal failure. As a measure of the urea excreting power of the kidneys, it has been recognized since the work of Ambard in 1914 that the most exact information requires comparison of both blood urea concentration and urea excretion in the urine. The simplest and most satisfactory way to express the relationship between these two factors is by means of the "blood urea clearance", by which is meant the cubic centimeters of blood per minute cleared of urea by renal excretion. The average normal clearance for adults is fifty-four cc. per minute. There is a chart made for correction of body size useful in children. The essential for a good prognosis is that within four months after the acute onset, the clearance, if it has fallen, shall have begun a consistent climb back towards a normal level. Cases in which a marked fall of blood urea clearance occurs during the initial months and no definite tendency to rise follows within four months after onset, progress downward to the active chronic or terminal stage. When the blood urea clearance falls to five per cent of normal, uremia appears to be inevitable.

Examination of the eye grounds by a competent ophthalmologist gives us much valuable information as to diagnosis and prognosis. The diagnosis may be first made by the eye man. Hemorrhages, edema of the optic disc, and transitory blindness due to spasm, are features of all forms of severe nephritis. With the exception of those occurring in pregnancy and acute cases which may subside, patients presenting this picture of albuminuric retinitis usually have but twelve to eighteen months to live, and these stages may precede the stage of complete inefficiency of function in uremia.

During the first weeks of acute hemorrhagic nephritis, one can not tell much about the prognosis from the initial blood pressure level. A case which shows little or no hypertension in the beginning may pass into the chronic state as well as the

one that shows hypertension in the acute stage; likewise recovery may occur in either case. The duration of the hypertension in the favorable cases is usually four to six weeks from the acute onset. According to the results of Branch and Linder and of Van Slyke, permanent marked hypertension developing during chronic hemorrhagic nephritis usually indicates the addition of an arteriosclerotic element to the pathology of the disease. Comparison of clearance changes in hemorrhagic cases with and without marked hypertension indicates that the rate of renal destruction does not progress much faster in those with hypertension than in those without. Hypertension adds its symptoms to the clinical picture but uremia does not appear to come on any more rapidly than in cases without hypertension. A marked fall in blood pressure occurs often in the last weeks or days of terminal nephritis, in cases that have previously had a high blood pressure. Usually this fall is a sign of cardiac failure. In exceptional cases hemorrhagic nephritis can run its entire course from the acute onset to final uremia without definite hypertension. The main significance that attaches to hypertension is that it marks the type of case that may terminate from circulatory failure before renal failure has reached a lethal degree.

In the acute stage of acute hemorrhagic nephritis the degree of initial hematuria seems to have no relation to the prognosis nor to the severity of the disease. Neither does the duration of the hematuria appear to have any close relationship to the prognosis.

Brown and Roth have reviewed the literature concerning anemia in nephritis and have presented data indicating that the anemia is due to injury to the bone marrow, which tissue shares in the constitutional damage that is known to be suffered by the heart, retina and blood vessels. They further presented figures showing a definite prognostic significance of anemia in nephritis. In a group of 139 cases, those with no anemia showed in two and a half years 18% mortality; those with 60 to 85% hemoglobin showed 46% and those with less than 60% showed 85% mortality. In prognosis, the temporary anemia of the acute stage is of no more significance than the

temporary fall in blood urea clearance; and the absence of anemia is no sign of a mild course or favorable outlook. While the presence of anemia usually indicates a bad prognosis, the fact that the hemoglobin is nearly normal does not mean the case is not a severe one.

Just as infections play such a large part in the etiology of acute nephritis, so does eradication of focal infections in the acute cases play a large part in controlling the progress of the disease, preventing it from going into the chronic stage, and from adding further renal damage. The removal of focal infections also lessens the dangers of exacerbations after the acute stage has passed.

CONCLUSION

(1) It is important that the clinician remember that functional tests should not displace either clinical examination or judgments based on careful observation and examination of the patient.

(2) In acute nephritis most of these tests are of little importance until the acute stage has passed, but in the recovery stage, particularly if recovery is delayed, they may be of much value in prognosis and in the estimation of residual kidney damage. The tests must be repeated again and again and found to give consistent results before they can be relied on.

(3) The concentration test, while very simple, may give us the first indication of kidney damage.

BIBLIOGRAPHY

1. Studies of Bright's Disease: Van Slyke et al. Medicine Monographs, Vol. XVIII.
2. Hutchinson, H. S.: Canad. M. A. J. XX, 1929.
3. T. Gillman Moorhead: Brit. M. J., Sept. 22, 1928.
4. Oxford Medicine.

Lymphopathia Venerea—Lymphopathia venerea is an infectious venereal disease, probably due to a filtrable virus, which is characterized clinically in the male, as a subacute, indolent, inguinal adenitis, which continues to suppuration, fistulation, and heals later by scar retraction. In the female, the inguinal involvement is not the rule, but there is an invasion of the deep pelvic and perianal lymph channels, which, after a chronic course, heals with scar formation, and with eventual stricturing of the bowel. This clinical picture has been described by several authors as the anorectal syndrome.—*Lehmann and Pipkin, Texas State J. Med., July 1933.*

THE TREATMENT OF BRIGHT'S
DISEASE*FRED WILKERSON
Montgomery, Ala.

Inasmuch as the previous papers of this symposium have covered the other aspects of Bright's disease, this discussion will be limited entirely to therapy. Unfortunately there is no specific remedy for any form of nephropathy, so our treatment is largely symptomatic and supportive in nature. Our efforts are directed toward relieving the strain on the diseased organs, toward preventing complications, and toward helping nature do any healing that is possible. Many features of the treatment of renal diseases are far from satisfactory, but almost invariably we can alleviate suffering and frequently restore patients to many years of comparative health and activity.

The classification of Bright's disease to be followed will be that used in the previous papers, but before discussing the management of the different types of nephritis, I would like to consider two phases of the subject about which there is a good deal of confusion, namely the question of diuretics and that of diet.

Diuretics, more perhaps than any other drugs, are used in this group of diseases unnecessarily and often harmfully. In the acute forms of nephritis, their use is not only practically of no value but may be injurious. Inasmuch as the oliguria and the edema are usually of short duration and respond to the other methods of treatment, it is entirely unnecessary to use them. The edema accompanying the other forms of nephritis does not often respond satisfactorily to diuretics, but in the edematous tubular nephritis and lipoid nephrosis with marked edema they may find a limited field of usefulness. In many cases of nephritis, particularly the arteriosclerotic type, the edema is due to a complicating myocardial failure and not to renal insufficiency. The best diuretic for this type is, of course, digitalis and, if necessary, one of the purine group such as theophyllin or theocin, which act as vasodilators, especially of the smal-

ler arterioles of the heart and kidneys. Acid salts such as ammonium chloride or calcium chloride employed in large doses are sometimes useful and they may be supplemented by the use of novasurol or salyrgan, both of which are mercurial diuretics.

In my experience salyrgan is more effective and less toxic than novasurol, but neither should be employed in acute or chronic hemorrhagic nephritis, or if there is a marked decrease in kidney function. According to Mosenthal this really leaves as suitable for the use of diuretics only a few cases of "uncomplicated edematous tubular nephritis or lipoid nephrosis"¹. The mild alkaline salts, such as potassium citrate, are not very effective. Glucose, particularly as a hypodermoclysis or intravenously, often has some diuretic effect. Diuretics should be used only in the types of cases mentioned and always with caution. They should never be administered for more than a few days at a time, with a rest period of several days preceding their repetition. Their indiscriminate use in all types of kidney disease is to be deplored.

The past two decades have seen almost a complete change in our ideas as to the dietary treatment of nephritis, particularly as regards protein. When I began practice rigid protein restriction was the rule and I recall a perfectly beautiful case of pellagra that developed in an old lady under my care for a nephrosclerosis. She was on a strictly carbohydrate diet almost protein free and sadly lacking in vitamins, which were at that time unheard of. The pellagra developed after six months of such a diet and cleared up promptly when I put her, with many misgivings, on the diet advocated by Goldberger as the result of his pellagra studies. Protein restriction was based on the theory that elimination of the end products of protein catabolism was too much of a strain on the diseased kidney. It was not realized then that the deposit of protein in the tissues entails no work on the kidneys and that unless enough protein be given to replenish that used in the ordinary "wear and tear" of the bodily activities, the body will use its endogenous protein, whose end products must be eliminated by the kidneys just as in the case of the exogenous proteins. The resultant strain on the kidneys is the same, conse-

*Third and last part of a symposium on the subject.

*Read to the Association in annual session, Montgomery, April 19, 1933.

quently there is no advantage in too great curtailment of protein intake, but on the contrary this may be actually harmful. It is now known that a certain amount of protein is necessary for the processes of repair and for the maintenance of strength. If the supply of protein is too limited, anemia is likely to develop and if the serum protein becomes too low edema will occur. It is quite possible that the inadequate protein so often allowed is responsible in part, at least, for the weakness, anemia and edema that occur in certain types of Bright's disease. Thus, due to a mistaken conception, our efforts may have oftentimes aggravated the condition we were trying to alleviate.

Newburgh and his associates² fed rats large amounts of protein food and found after a short time that albumin and casts appeared in the urine, but in his experiments a much higher percentage of the diet was protein than is likely to be found in any human diet. It is admitted now, even by Newburgh himself, that the albuminuria and the casts were probably due not to the protein itself but to certain nuclear materials in the diet. "Liberal protein allowances do not of themselves injure the kidney."³ This is proven by a study of the Eskimos, whose diet is entirely protein and fat, and by the experiences of explorers like Stefansson and others who have lived for years at a time on diets composed almost exclusively of the same elements.

The metabolism of protein is the same in Bright's disease as in health, except that in those types of Bright's disease with marked albuminuria an even greater supply is needed, because in addition to that used in the ordinary processes of repair the protein lost in the urine should also be replaced. Most of the energy should be supplied by carbohydrate, which is a protein sparer. If a liberal supply of carbohydrate is given nitrogen balance can be maintained with only moderate amounts of protein. In mild cases of Bright's 60-75 gm. of protein daily should be given, while possibly as little as 25 gm. may suffice in severe cases with increasing nitrogen retention in the blood or signs of impending uremia. In a case of only moderate severity three glasses of milk and one egg daily with an average helping of fish or meat three or four times

a week will furnish the necessary amount of protein.⁴ The proteins of highest biologic value and hence the best to use are the animal proteins, those furnished by milk, meat and eggs. Just here let it be said there is no biologic difference between red meat and white meat and one is no worse for the nephritic than the other. As the metabolic effects of the two are identical, there is no clinical justification for restricting red meats and allowing white meat. In the chronic forms of Bright's disease the illness will last over a period of months or years, so it is important that as liberal a diet as possible be allowed.

Acute hemorrhagic nephritis usually follows some acute infection such as scarlet fever, tonsillitis or diphtheria, so the most important thing is control of the primary disease. Complete rest in bed, until the albuminuria clears up, should be insisted on. At first the diet should be liquid, fruit juices and milk, to which are gradually added cereals, bread, toast, cooked fruits and the milk may be increased to one quart a day. For at least a month the diet should be mainly carbohydrate except for the 40 gm. of protein contained in the quart of milk. The fluid intake in the beginning should not be over 800-1000 cc., which may be increased as the edema disappears and the urinary flow increases. Due to the edema usually present the salt content of the diet should be low. Mild cathartics may be added, but diuretics and other medication should be avoided, except that, of course, iron will be needed if anemia follows. The edema will usually respond to the rest, the fluid restriction, the diminished salt intake and the mild catharsis. Hot packs and other measures to promote elimination through the skin are not very effective. Diuretics should not be used. Uremia in acute hemorrhagic nephritis is the result, usually, of three factors: edema of the brain, angiospasm, and damage to the brain by the toxins of the hemolytic streptococcus, and is not, as a rule due to the retention of nitrogenous products in the blood, as is true in the uremia of the chronic forms of nephritis. Absolute rest and quiet is of paramount importance in the treatment of this type of uremia. Sedatives, such as hot baths, chloral and morphine are likely to be necessary. The die-

tary measures outlined should suffice and if there is much vomiting salt solution or glucose by hypodermoclysis or intravenously may be needed. Active purgation is indicated, but sweating is of little value. Magnesium sulphate in 1% solution intravenously and lumbar puncture are both valuable aids at times. I have seen convulsions controlled by lumbar puncture after all other methods had failed. Bleeding is not of much value in this type of uremia. After a few weeks this form of nephritis usually clears up, although some cases drift on and become chronic. These patients should avoid becoming chilled and should make every effort to escape colds, influenza, or other infections. All foci of infection should be removed.

It is equally as important in chronic hemorrhagic nephritis that infectious foci be eradicated, especially those harboring the hemolytic streptococcus. The diet in this long drawn out condition must not only put as little strain on the diseased kidneys as possible, but it must be sufficient to maintain bodily strength and to prevent anemia and edema, which will occur with too low a protein intake. Sufficient carbohydrate and fat should be included to maintain the normal weight. In the presence of edema there should be fluid restriction with limited salt. In the average case it will suffice to tell the patient to add no salt to his food after it comes from the kitchen. Condiments, rich or highly seasoned foods, and fried foods are not permitted.

During an exacerbation, rest in bed in an airy, sunshiny room is advisable with quiet, calm attendants, and every effort must be made to protect the patient from stress and anxiety. As convalescence occurs his activity may be gradually increased. Iron, such as Bland's mass gr. X or XX, three times daily, is excellent for the anemia that is usually present. Mild saline laxatives may be needed, but drastic purgation should not be resorted to except in the presence of edema. The same general principles as employed in the edema of acute nephritis are used here, except that, in this instance, if the previous measures do not suffice, mild diuretics, except the mercurial group, may be used very cautiously as already described, but their dangers and their limitations should be borne in mind.

The treatment of the retention uremia of this form of Bright's is largely symptomatic. If possible 3000 cc. of fluid a day should be given in order to maintain as large a volume of urine as possible. If the patient is vomiting this may be given by hypodermoclysis or intravenously, saline solution being used if the blood chloride is low, while, if there is acidosis or the patient needs food, 10-20% glucose solution is preferable. The two may be combined. These measures will usually control the acidosis, but rarely it becomes necessary to use sodium bicarbonate also. The salt, protein, and total calories of the diet should be reduced. Saline laxatives and sedatives are necessary in practically all cases. In this type of uremia bleeding is oftentimes valuable, but it should not be tried if there is much anemia. The heart should be watched for myocardial weakness frequently develops.

Edematous tubular nephritis or lipid nephrosis, the chief form of chronic degenerative nephritis, may or may not be a distinct entity. This is characterized by the passage of large amounts of albumin in the urine and by a marked edema, due to low serum protein resulting from the loss of so much albumin in the urine. The treatment of the edema is the most important phase of the therapy of this condition and here the high protein diet of Epstein has proven efficacious. The total caloric intake should be from 1200 to 2500 calories and the total protein from 120 to 240 gm. daily, the carbohydrate from 150 to 300 gm., with fat making up the balance. This diet is made up from the following articles: lean veal, lean ham, whites of eggs, gelatin, lima beans, lentils, split peas, green peas, mushrooms, rice, oatmeal, bananas, skimmed milk, tea and coffee. The metabolic rate is low in some of these cases, in which large doses of thyroid extract may be very effective. The thyroid should be given in small doses to start with and gradually increased to as much as gr. LX a day. Repeated blood transfusions sometimes help. Rest in bed during the periods of edema is necessary. Diuretics can be used to more advantage and with greater safety in nephrosis than in the other forms of nephritis. Perhaps the best are the acid salts, such as calcium or ammonium chloride, in

doses of 120-180 grs. a day for several days followed by salyrgan, 1 cc. intravenously every other day for two or three doses. The course of this form of renal disease is quite variable, some cases dying after a few months, others living for years and apparently recovering. Repeated exacerbations are frequent.

In arteriosclerotic nephritis the renal lesion is only part of a generalized sclerosis of the arterioles and treatment should be directed more toward the circulatory system than toward the kidneys. Hypertension is practically always present and the usual measures for it are indicated. The weight of the thin person should be maintained, but the obese should lose gradually until their weight approaches the normal. The diet in the average case should contain about 1 gm. of protein per kilogram of body weight. More than half the calories should be supplied by carbohydrate. Salt, alcohol, condiments, tea and coffee should be interdicted or allowed in very small amounts. One of the most important measures is rest, mental and physical. Nothing is of more value than to lie down after the midday meal and to take frequent short vacations. Moderation in exercise is necessary, nothing more strenuous than walking or golf being allowed those afflicted with this trouble. Sedatives are frequently called for and mild laxatives should be used when needed for intestinal elimination. "Moderation" and "deliberation" should be the watchwords of patients with this form of renal disease. Myocardial insufficiency frequently develops in nephrosclerosis and should be treated in the customary manner. Any edema that may occur is not due to the renal lesion, but to heart failure and should be treated as such. In the arteriosclerotic type of nephritis, headache, muscular twitchings and convulsions may develop even without any decrease in the renal function. These symptoms are due to the cerebral arteriosclerosis and must be treated accordingly. If renal insufficiency should supervene, the measures already outlined are to be tried.

Despite the absence of specific measures, we should not be too pessimistic in our handling of these cases for it is important to bear in mind that we may do much toward alleviation of suffering, and often-

times toward the restoration of these patients to active, useful lives.

BIBLIOGRAPHY

1. Mosenthal, H. O.: Oxford Monographs, VII: 417.
2. Newburgh, L. H. and Curtis, A. C.: Arch. Int. Med. XLII: 801.
3. McCann, W. S.: Ann. Int. Med. V: 5,579.
4. McLester, J. S.: Nutrition and Diet in Health and Disease. Philadelphia. W. B. Saunders Company.

ACUTE OSTEOMYELITIS*

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Osteomyelitis, while not an uncommon disease, is rarely diagnosed early; and the diagnosis when made is usually one of rheumatism. This is not so much the doctor's fault as the family's, because they consider it rheumatism and do not call a physician. Then, physicians themselves do not carry the possibility of an osteomyelitis in mind in all cases of pain about the joints. Of course, after the bone ruptures and there is redness and swelling, the diagnosis is not so difficult to make. However, in order to save the life and prevent an enormous morbidity, it is necessary to make the diagnosis before rupture occurs.

Osteomyelitis is really an inflammation of all the structures that go to make up the entire bone. It is quite impossible for any acute infection to be confined to the marrow or the cancellous tissue or to the periosteum, in view of the intimate connection of these structures and the easy communication between them by means of the Haversian canals and the para-epiphyseal line.

There are two or three points in the anatomy of bones, especially of the long bones (and it is in these long bones where most of the infections occur), that are worthy of consideration and help to explain certain signs and symptoms of the disease. First, the cortex or compact bone is a dense structure surrounding the medulla. According to the age of the patient, this compact bone varies in thickness from a fourth to an eighth of an inch in the middle of the shaft of the long bones, and gradually tapers to tissue-paper thinness at the epiphyseal line.

*Read to the Association in annual session, Montgomery, April 20, 1933.

This helps to explain the fact that the infection usually breaks through the cancellous bone at this point.

Secondly, the blood supply is to be considered. The nutrient artery perforates the cortex about its middle and immediately divides toward each extremity. This nutrient artery supplies the medulla and endosteum, anastomosing freely with the cortical vessels through the Haversian canals, and ends in the juxta-epiphyseal line in minute capillaries. The return circulation by the venules begins in a dilated blood space at this point. This favors the lodgment of the septic organisms in this locality.

Finally, the epiphysis receives its blood supply from the cortical vessels and is not covered by periosteum; consequently, the epiphysis and the joints are rarely involved in acute osteomyelitis.

The space between the shaft and the epiphysis is called metaphysis. It is in or near this structure that the infection first begins. As the child grows older, this becomes ossified and this area disappears. This accounts for the fact that osteomyelitis is rarely observed after the fifteenth or sixteenth year and is not often seen in adult life, except as a result of trauma.

Acute osteomyelitis is entirely a blood-borne infection and presupposes a primary focus elsewhere. The common agent is the staphylococcus. Next in order are the streptococcus, the colon bacillus and the pneumococcus. It is an unusual fact that the staphylococcus in bone infections is much more malignant than the streptococcus. Why this should be I do not know. Mild cases that we have are due to streptococcus, and where streptococcus is found the prognosis is much more favorable. The primary source of the staphylococcus is in the skin—furuncles, boils, infected wounds—and from infection of the middle ear. The streptococcus comes mostly from tonsils and teeth. This blood stream infection is usually transient, but it may continue and become a bacteremia. In any real severe case a blood infection occurs very early; and, since you are dealing with a bacteremia rather than with an osteomyelitis, operative measures, therefore, are not of much avail.

Multiple lesions in widely separated bones are not uncommon. Most cases oc-

cur in children from two to ten years of age. Once infection is implanted, the patient is rarely cured permanently, unless operation is done very early. Recurrences are common—some as late as thirty years after the original infection. Recently, we had a doctor who had had osteomyelitis for twenty years die in our hospital with malignant hypertension. He had been operated on twenty-three times—some of the operations radical; most of them simply opening recurring localized abscesses.

Trauma plays an important part. It is probably an important factor in at least forty per cent of the cases. Consequently, boys are more often affected than girls.

PATHOLOGY

Inflammation of the bone structure is identical with the inflammation elsewhere, if we bear in mind that all bone structures are involved. Second, that due to the dense structure of bone, rupture of an abscess does not occur early; consequently, pain is more severe and toxemia more profound. Any pathology may be found from a localized abscess to complete destruction of the entire bone with death of the patient.

We formerly thought that the infection travelled down the medullary cavity. It has been shown conclusively that infection travels from the cancellous tissue at the end of the bone outward and ruptures beneath the periosteum, and then travels downward, stripping it from the bone, and invading the medulla through the Haversian canals. Sometimes the medullary cavity is not involved. This pathological fact has an important bearing on our operative procedures.

THE DIAGNOSIS

The diagnosis is not made early for two reasons: first, in mild cases, the family is likely to attribute the pain to growing pains; and second, a diagnosis of rheumatism is frequently made and many days are lost in the treatment for this condition. Naturally, the symptoms will vary according to the bone involved and the severity of the infection. A flat bone, such as the ilium, which is not infrequently involved, may present pain in the right iliac fossa, fever, localized tenderness and rigidity, and other confusing symptoms. However, the long bones are most frequently involved; the up-

per end of the tibia first, the lower end of the femur second, and the ulna third, etc. Localized pain, fever and toxemia are the important symptoms. Pain is very severe, boring in character; worse at night, increased by application of heat, and relieved only by morphine. Fever is usually high. Sometimes the toxemia and prostration are so marked that the localizing symptoms, such as pain and tenderness, are overlooked. This is especially noticeable in case of infections in the upper end of the femur. All that we need to make the diagnosis in any bone are localized pain, tenderness, fever and toxemia. Sometimes the infection is so severe that a patient will die within forty-eight hours, and in these cases the diagnosis is not usually made.

The only sign of importance is localized tenderness. This occurs at the epiphyseal end of the long bone. This is definite and can be found in all cases. Later, after rupture occurs, there is redness, swelling and increased heat, and other evidence of inflammation. The joint can be excluded always by gaining the confidence of the child and taking hold of the bone as far from the infected area as possible and gently manipulating the joint. This will definitely exclude the joint.

X-ray is of no value in these early cases; and it is only later—from ten days to two weeks—that the x-ray signs begin to appear. This is too late, of course, to be of any value and we must depend on the clinical findings.

TREATMENT

Treatment is prompt incision of the bone. This can be accomplished in the early cases by drilling a few holes into the shaft of the bone near the epiphyseal line, directed toward the epiphysis but being careful not to invade this structure. This can be enlarged as necessity requires. Bearing in mind that the infection travels down beneath the periosteum and not in the medullary cavity, the shaft of the bone should not be opened widely, unless it has already become involved. In cases of desperately ill patients, it is sometimes necessary to do but little since their resistance is so low. Sometimes there is early separation of the periosteum and destruction of the shaft of the bone. As a rule, it is not advisable to do more than puncture for adequate drain-

age and wait and remove the dead bone at a subsequent period when the patient has improved.

It is difficult to discuss the treatment of acute osteomyelitis without merging into the treatment of chronic osteomyelitis. As soon as drainage occurs, and the symptoms subside, we may consider that we are dealing with chronic osteomyelitis. These cases, however, are so close to the acute stage that we may discuss briefly the treatment of these early chronic cases.

The presence of dead bone is sometimes of value in forming a support for the limb while new bone is forming. This is especially true in single bones. These cases can be benefited by removing half or two-thirds of the shaft. Occasionally, the infection is so severe that we feel it advisable to remove the shaft of the bone at an early operation. This we have done in two cases—one several years ago, and one recently, with very happy results. The shaft was completely reformed in the early case and the boy is now walking without deformity. The other case was that of a girl about sixteen years of age, who came in about two weeks after beginning of infection, and the shaft was entirely separated. In removing the shaft of the bone, it was necessary to invade the epiphysis, since it is from the epiphyseal end of the bone that growth occurs. At the present time we are inclined to believe that the bone will be entirely replaced.

Occasionally we see these cases after they have ruptured and, feeling that drainage is adequate, we treat them along general lines and do not operate. Especially, is this true in the involvement of small bones. In these cases, patients are given an abundance of food and placed in the sunshine. The prognosis is very good, provided we get the cooperation of the parents. I have known several complete recoveries to take place following this procedure.

These early chronic cases are treated now by the use of maggots. The maggots seem to have the ability to know dead tissue from live tissue and only destroy the dead tissue. I have known Dean Lewis to remark that "we could do as well as the maggots, if we did not do any more than the maggots do." Anyway, it is a valuable adjunct to treatment, however distasteful it may appear to you or to the patient.

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THE ONE-DOSE PRECIPITATED TOXOID

The immunising value of toxin or toxoid depends primarily upon the quantity of specific antigen present. Ramon, in 1925, observing an increase in the antitoxic value of horses with an abscess at the site of injection, found that the addition of tapioca to toxoid improved its value as an antigen and concluded that this improvement was likely the result of slower absorption and slower elimination of the antigen.

In 1926, Glenny, Pope, Waddington and Wallace found that the addition of alum to diphtheria toxoid greatly increased its antigenic value. In 1931, Glenny and Barr described the complete precipitation of diphtheria toxoid with alum and pointed out that, while the crude toxoid was rapidly absorbed and eliminated, the alum toxoid was slowly absorbed and remained in the body for a sufficient length of time to act as its own secondary stimulus.

In 1930, Havens and Wells, learning of these experiments and sensing the great value from a public health view-point of a safe and efficient one-dose toxoid for immunising purposes, began laboratory experiments with guinea pigs in an effort to so perfect the product as to make it suitable for more general clinical use. These preliminary experiments have been set forth by them in an article appearing in the June 1932 issue of the American Journal of Public Health. In the fall of 1931 were begun the first clinical experiments in Lee County, Alabama, on which were based the data comprising the above article; these

studies were so encouraging that they were continued through 1932 with the results set forth in the April 8, 1933 issue of the Journal of the American Medical Association in an article contributed by Graham, Murphree and Gill and comprising a complete study of 798 cases. In addition to the above clinical testing of this product, some 600 children in Virginia have been immunised with it by Drs. McGinnes and Stebbins, in collaboration with Dr. G. W. McCoy, Director of the National Institute of Health. In this series of cases approximately 95 per cent were rendered Schick negative by a single dose.

Dr. McCoy, in a recent communication based both on the above clinical studies as well as laboratory experiments, makes the following observation:

"We believe that precipitated toxoid is much more active than crude toxoid and that a single dose of 1.0 cc. is an effective agent. Reactions following its use have certainly been no more noticeable than following crude toxoid; in fact the impression is pretty general that reactions from precipitated toxoid are *less frequent* and *less severe* than following the older product. Local induration following precipitated toxoid was observed in a number of cases, particularly following the 1.0 cc. dose. This induration was in no case objectionable and tended to clear up in about six weeks. It is very probable that this local reaction is associated with the large immunity response. We see no reason why Alabama should not adopt this product for general use, and can readily appreciate the great saving in time and expense which will follow."

One year ago, and while the Department of Health was endeavoring to accumulate additional clinical evidence, the State Board of Censors carefully considered the data then available and expressed approval of the continuation of the work and the compilation of suitable statistics upon which sound conclusions might be based.

At the July 1933 meeting of the Board these were presented, which, in conjunction with the work done in Virginia and the endorsement by the National Institute of Health, seemed ample to justify the Board in placing its stamp of approval upon the

use of the one-dose precipitated toxoid as a safe and efficient method of providing diphtheria immunisation. This the Board did and in the future physicians and health officers will be furnished the one-dose preparation from the department's laboratories.

And what, it may be asked, is the significance to be attached to the newer preparation?

First, with the same amount of effort and labour on the part of physicians and health workers, twice as many children can be immunised and for the same cost. This is no negligible factor when mass protection is the goal sought. While Alabama has for some years been struggling as best it could to make an appreciable dent in the diphtheria death rate, it must be conceded that our results have been somewhat disheartening. Figures recently released by the United States Public Health Service show our diphtheria death rate for 1932 to be the third highest in twenty-eight states from which statistics were available. Several reasons for this high mortality rate present:

Alabama is predominantly a rural and agricultural state; most of the diphtheria deaths—in Alabama 74 per cent—occur in children under five years of age and before they reach school. The efforts of health workers in rural sections have had to be focussed largely on the school-age group. Parents generally—and certainly not in the rural areas—have not become sufficiently informed as to the need for protecting the infant during the first two years of life. Here is where the family physician armed with the one-dose toxoid can be of immeasurable aid in reducing our present unsavoury death rate. If he will but incorporate into his ritual of practice the inviolable rule of immunising at six months every infant at whose birth he officiates, as well as the other children of the family of pre-school age, not alone will his practice and prestige grow apace, but Alabama's diphtheria death rate will take a toboggan-like downswing and the health forces can seek other and more fertile fields. It is hardly conceivable that any mother would demur at having her child receive the one injection while frequently she might do so when informed that two or three injections were necessary. The last scientific contribution to Alabama's Health Department on the part of its late laboratory director, Dr. L.

C. Havens, was the perfection of this newer technic in diphtheria immunisation. What finer spirit of appreciation could be shown on the part of the medical profession than that the practical fruits of his labours are being reflected in the rescuing of children's lives through the employment of an agent placed by him in our hands?

J. N. B.

TOXICITY OF CINCOPHENIC COMPOUNDS

During the past few years the medical literature has contained a number of articles calling attention to the toxicity of cincophen. This drug is phenylquinolin-carboxylic acid and was introduced under the proprietary name "atophan". It has been used extensively in the treatment of arthritis and with apparently good results in many cases. Consequently many modifications and derivatives have been put on the market, often under trade names, until now there are more than twenty of this group offered for sale. The following have been accepted for listing in New and Non-official Remedies—Atoquinol, Cincophen, Chloroxyl, and Neocincophen.

But, whether Council-accepted or not, these preparations have been extensively advertised by their manufacturers and their merits so impressed upon physicians by detail men that they have now become widely used, both by the profession and by the general public. However, the list of fatalities directly attributed to their use is constantly growing. Pregnant women, in fact women in general, alcoholics, and patients with hepatic disorders seem to be especially prone to complications and death following the administration of cincophen or cincophen compounds.

The latest evidence relative to the toxicity of these drugs is to be found in the April issue of the *Annals of Internal Medicine* in which Grigg and Jacobsen¹ report another death due to their use. The patient had been taking both atophan and oxyl-iodide in unknown amounts at intervals for several months for the relief of arthritis. She slowly lost about fifteen pounds in weight and began to lose strength also. She became very nervous and suffered from in-

1. Grigg, Walter K., and Jacobsen, Victor.: Subacute Yellow Atrophy of the Liver Following Ingestion of Cincophen and Allied Compounds. *Ann. Int. Med.* April 1933.

somnia, nausea, and a slight incoordination of muscular movements. Finally, she became jaundiced and died of a terminal broncho-pneumonia. The autopsy revealed little of interest except that the liver was "bile-stained, hard and fibrous, and irregularly lobulated". The microscopic diagnosis was subacute yellow atrophy of the liver. These findings conform with previous reports in which death has followed the ingestion of these drugs. In every case which has come to autopsy either acute or subacute yellow atrophy of the liver has been a constant finding. Just why some individuals are more susceptible than others is not understood. The benzol ring is a common component of these remedies and it is thought to be responsible for the toxicosis.

The use of any chemical compounds with such potential dangers should be most carefully guarded; yet, at present, we find just the opposite state of affairs. These dangerous, and even fatal, drugs are widely advertised and are sold over the counter

to anyone who asks for them. Physicians have been given, through advertising copy and by detail men, many glowing accounts of the efficacy of the cinchophenic compounds, but have been told little or nothing in regard to their lethal effects. Many manufacturers hide the real nature of their products by marketing them under a variety of trade names with little or no suggestion of the contents, such as Agotan, Quinophan, Phenoquin, Cincosal, Cinca-Vess, Cincodin Capsules, Atophan, Cinchopyrine Tablets, and Oxyliodide.

If life is to be safeguarded and future deaths prevented, it would seem necessary that certain regulatory measures should be adopted, such as: (a) cinchophen and its allied compounds should be sold only on prescription; (b) physicians should familiarize themselves with the dangers of these drugs and warn their patients accordingly; (c) manufacturers should label their products clearly and should warn practitioners of the possible toxicity of their remedies.

W. W.

THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

POST-GRADUATE OBSTETRICAL COURSES FOR ALABAMA PHYSICIANS

J. R. GARBER
Birmingham

Sponsored by the Medical Association of the State of Alabama, Dr. J. R. McCord, Professor of Obstetrics at Emory University, Atlanta, and field representative of the Bureau of Child Hygiene, Washington, comes to Alabama for a series of lectures on obstetrics in various parts of the State. Dr. McCord will begin his lecture course September 25th returning October 9th and 23rd and again for a few weeks in November and December.

Before remarking upon the nature and value of the work, a brief introductory remark about Dr. McCord will be appropriate and of interest.

Dr. McCord merits the wide reputation of approval and eminence that he has attained as an obstetrician in American medical circles. He is, in fact, a student and a master of his specialty, and as a writer and lecturer he enjoys the high regard and es-

teem of the profession. He is eminently practical and his long and successful record with medical students and his experiences as post-graduate lecturer in Mississippi, Florida, Georgia, as well as in some of the eastern states, insure a profitable and wholesome result in a similar endeavor in Alabama.

There can be no doctor in Alabama so naive in imagination, so crass in mentality, so enured in sensibility as to feel or admit a sense of proficiency and omniscience in obstetrical lore, who would disdain additional learning, who would discount the opportunity for professional advancement. If there be one such in the confraternity of our State profession let him be reminded of the maternal mortality statistics of Alabama that are mute and impartial witnesses against members of the medical profession who perform chores of the obstetrical attendant. The yearly toll of maternal deaths in Alabama for the past six years has ranged from 9.5 to 7.7 per 1000 live births. In the same period a review of rec-

ords shows that more deliveries were made in the home, including white and colored patients, than at hospitals. Analysis reveals a higher mortality in home work than in hospitals and the death rate is less among midwives than among physicians. Further studies have shown that in Alabama forty-two per cent of the puerperal deaths of mothers who had reached the last trimester were from albuminuria and convulsions, indicating lack of adequate prenatal supervision. These are facts that should arouse the pride and conscience of those serving in the capacity of "life guards" of expectant mothers and unborn babies. If constructive and educational movements are resisted within and by the profession, how can the problem be attacked? How can progress be recorded? How can means of conservation be employed? We are told "learning comes but wisdom lingers". The doctors of Alabama are soon to be presented with an excellent opportunity to review the many fundamental principles in obstetrics, thereby rendering them smarter, wiser men.

The course of lectures planned by Dr. McCord has the heartiest endorsement of the officers of the Medical Association of the State of Alabama and from each member of the Association having any obstetrical practice an active and interested cooperation is not only anticipated but sincerely urged. Dr. McCord's plan is to visit certain strategic centres, so chosen that all the profession may be enabled to attend, and at each of these centres conduct his course over a period of five days. Each afternoon from Monday to Friday is devoted to some phase of obstetrics, and the course is so planned as to cover the important problems involved. This post-graduate instruction comes to us through the Bureau of Child Hygiene, Washington, and is open to all physicians in the State, *but only to physicians*.

Further information regarding meeting places, hours and dates of lectures will be forwarded to the profession in ample time for the individuals to arrange for attendance.

WILDCAT LIABILITY INSURANCE— A WARNING

Two years ago the Secretary of the Association issued a statement to the profession regarding policies against loss from liability

ty imposed by law for damages on account of bodily injuries or death suffered by any person or persons in consequence of error, malpractice, or mistake. At that time the members of the Association were warned not to do business with any company that could not present proof that it had qualified with the office of the State Superintendent of Insurance.

Despite such admonition it appears that certain ones have fallen prey to wildcat liability insurance with the result that they have no redress when protection is needed. This further warning, therefore, is given and concluded with the following statement from the Superintendent of Insurance: "Persons (physicians) seeking redress from unauthorized companies must do so in the courts of the State of domicile of the company. Alabama courts have no jurisdiction over such cases."

If any member of the Association is in doubt as to the policy he holds, he should ask the Secretary for advice regarding it.

NEW DIRECTOR OF LABORATORIES ARRIVES

Announcement is made of the arrival in Montgomery of Dr. James G. McAlpine to assume direction of the Laboratories of the State Department of Health. A graduate from Wesleyan University, Middletown, Connecticut, in 1916, he received his Master of Arts degree in 1917. The next two years found him in the United States Army with service in France and Germany, emerging as a captain in the Sanitary Corps. Commercial chemistry attracted him for a year or two but he then resumed his studies, being granted his Ph.D. degree from Yale in 1924.

Since that time Dr. McAlpine has been engaged in laboratory work of one type or another and has had wide experience with most of the problems he will encounter in Alabama. For two years beginning in 1929 he conducted a laboratory for the Government of Venezuela, particularly stressing water and milk control, and since his return has been with the United States Public Health Service.

Dr. McAlpine has published a number of papers including several on undulant fever and contagious abortion. Alabama is fortunate in securing a man as well trained as Dr. McAlpine.

TRANSACTIONS OF THE ASSOCIATION

TRANSACTIONS OF THE SIXTY-SIXTH CONSECUTIVE ANNUAL SESSION OF THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA, HELD AT MONTGOMERY, APRIL 18-21, 1933.

First Day, Tuesday, April 18

The Medical Association of the State of Alabama convened in the ballroom of the Jefferson Davis Hotel and was called to order at 10 A. M. by the President, Dr. S. Kirkpatrick of Selma.

Invocation was offered by the Rev. Dr. Donald MacGuire.

Addresses of welcome were delivered by Hon. B. M. Miller, Governor of Alabama; Hon. W. A. Gunter, Mayor of Montgomery; and Dr. Robert Parker, President of the Montgomery County Medical Society, host to the Association.

The Senior Vice-President, Dr. K. A. Mayer of Lower Peach Tree, presented the President, Dr. Kirkpatrick, who addressed the Association as follows:

The President's Message

This Association, which has been characterized as the best medical organization in the world, is now sixty years old. I have had the rare privilege of serving in its ranks continuously for forty-five years; first under Cochran, then Sanders and then Welch. Permit me, before proceeding further, to express to the members of this Association a deep appreciation for the honor conferred in selecting me as their President; and I am particularly grateful to the profession for their unanimous support and cooperation during my term of office. I also sincerely hope that during these trying times no factional fights or petty differences may arise within our ranks to hamper our work for the advancement of the medical profession as a whole, and for a better supervision of the public health of this State.

Cochran, in 1871, with every detail complete, submitted a Constitution to the profession of this State for consideration and debate, which, however, was not adopted until 1873, and under this system, our organization has continued to operate since that time. The dominating thought in the mind of Cochran in the preparation of this Constitution was to engraft upon a scientific medical body a practical and workable public health system for the State, thereby furnishing trained leadership from the medical profession. In order to accomplish this end, certain factors, not needed in a purely scientific body, had to be incorporated. One of these, in order to give continuity and stability, was the College of Counsellors. The question has often been asked: "Why the College of Counsellors"? I feel that I can

do no better than to quote from the "Historical Background" of the *Compend* of our Association: "As a scientific body, there is no reason; as an important arm of the State government and to enable it to properly function in its legal aspects, coherency, stability and permanency for the organization are necessary, and it is through the College of Counsellors that these essential factors are largely furnished. The simple truth is that the bone and sinew of our organization rests in the College of Counsellors and the State Board of Censors. Permit these to crumble and the whole superstructure, from foundation to dome, is likely to topple". With this thought in mind, I venture to suggest, without recommending, that this Association strive to preserve the strength and integrity of this particular group and that careful heed be given to the important question of maintaining a proper balance between the College of Counsellors and the House of Delegates.

Amid the chaos now about us it may be well to pause and attempt to assess the relative value of things before they may become weakened or destroyed. This applies particularly to our public health system. Public health is public wealth; health and happiness are so closely related as to make one almost impossible without the other. Withdrawal of the benefits of medicine may not be immediately apparent; but when spread out over a period of years and with an increase in tuberculosis, hookworm, malaria, typhoid, and all preventable diseases, the baneful effects of such removal will be unmistakably seen. Every doctor should feel his responsibility to carry the gospel of good health to the people and to stress the urgent need of the continuance of an efficient public health system, such as we have enjoyed in Alabama for the last half century. It seems to me that now, when the Health Department of this State is passing through a critical financial ordeal, we, who have given so much to its making, should rally to its support and cast about it a strong and sheltering arm.

The Constitution prescribes as one of the duties of the Vice-President that "whenever a county society is ascertained to be apathetic and inattentive to its constitutional obligations, it shall be the duty of the Vice-President having jurisdiction to wisely and judiciously use his influence to stimulate such society into vigorous and efficient action".

I suggest that during the next twelve months the Vice-Presidents devote their time and energies to the rehabilitation and reanimation of county medical societies, even to the neglect of the semi-annual scientific meetings, if necessary.

Reports of the Committee on the Costs of Medical Care:—An unbiased digest of these reports, with comments by our State Health Officer, was published in the January issue of the State Journal. It is now in the hands of every member of our State Association and therefore need not be reviewed here, except to give a brief synopsis for the purpose of refreshing your memory and in order

that you may better follow the discussion. I urge you to reread and study these reports and file the above article for future reference.

In substance, the Majority Report recommends socialization of medical care for the people of the United States, based on a system of group taxes and group payment, with community medical centers to provide a more complete medical service, both preventive and therapeutic, in return for weekly or monthly fees, either in the form of insurance or taxation, or both. The Committee recommends also the extension of all basic health services so that they will be available to the entire population according to its needs.

The chief Minority Report recommends that the corporate practice of medicine, financed through intermediary agencies, be vigorously and persistently opposed as being economically wasteful, inimical to a continued and sustained quality of medical care and is unfair exploitation of the medical profession.

The two reports, while widely divergent on some points, are not irreconcilable should real effort be made to harmonize them. Both reports acknowledge the premise that there is need for a change in the present form of medical practice, in order to meet a changed and changing social order. Granting this, it does not necessarily mean shifting the control and taking the authority of the practice of medicine out of the hands of the medical profession and putting it into the hands either of the government or the lay public.

To my mind the Report of the Majority Committee is not without value to our profession. It serves to show the socialistic and economic tendencies of the times, at least at it pertains to the medical profession, and has done its greatest service by arousing the interest of medical men to the economic and social problems implied in medical practice, while not according to medicine the right of self determination or self differentiation, without which no organism can grow and develop in response to its needs. The chief Minority Report restates and reemphasizes the basic principles of medical practice which must be the foundation of all development in medicine, and recommends that all adaptations necessary to meet its redemptive function to society come from within the profession.

A review of the personnel of the Committee on the Costs of Medical Care is illuminating. It included Dr. Ray Lyman Wilbur, Secretary of the Interior, Chairman; Morris Llewellyn Cooke, engineer; Evans Clark, an economist, not a physician, and a director of the Twentieth Century Fund; and E. A. Filene, who, having passed his youth in a democracy that permitted one to make millions, now appears to be striving to turn this democracy into socialistic chaos so that nobody else will ever have the chance he had; W. J. Schiefflin, a man who makes proprietary medicines; representatives of eight richly endowed foundations; seventeen doctors of philosophy and seventeen doctors of medicine. Of the seventeen in the private practice group, only one is listed in the latest American Medical Directory as a general practitioner, and, I understand, he did not

sign the Majority Report. It is rather interesting to see how the lay members of the Committee have adroitly incorporated their personal views. As Past-President of the American Medical Association and President of one of the great American universities and as a cabinet officer in the federal government, Dr. Wilbur's assertions are likely to carry great weight with the public. A careful review of a number of his articles in various publications carries the conviction that he advocates, either knowingly or unknowingly, state medicine, and further severely condemns the profession in the manner of caring for the sick, especially of the poor and the middle classes. Many of his statements to the public indicate that the profession in its various specialties is demanding undue fees for the amount of service given.

The chief Minority Report, signed only by physicians and supported by the Journal of the American Medical Association, more clearly represents the medical thought of America and should serve as a basis from which to proceed, by holding fast to that which is good and discarding the worthless. Fortunately, there does not seem to be any marked tendencies towards radical changes in medicine in this country; consequently, progress should be allowed to take its selective course. This may not be the quickest way towards a solution, but it is far the safest way, and can permit of readjustment as developments gradually occur. By such means the country and the medical profession will not be thrown into a panic by a sudden revolutionary act which certainly would not prove for the ultimate good.

The medical profession is likely facing the greatest crisis in its history. About sixty-five per cent of its clientele are either unemployed or pauperized by diminishing returns on their investments. Many doctors are unable to buy gasoline with which to visit their poor patients, yet are carrying on bravely in spite of all discouragement. In no department of human endeavor has the quality of service been as rapidly stepped up as in that of medicine. In the face of this economic crisis and without available means for postgraduate work one must wonder whether these high standards can be maintained. Some physicians, in order to relieve their present distress, may feel compelled to accept immediate relief in any form regardless of the ultimate consequences.

The Majority Report recommends the extension of all basic health service so that it will be available to the entire population according to its needs. I contend that scientific health service has for some time been available to the entire population, rich and poor alike; the trouble has been that they have not been made sufficiently alert and health-conscious to apply for and obtain its full benefits and making due allowance for the handicap of the poor in the lack of funds necessary for obtaining its maximum benefits. For varying reasons, there has always been, from time immemorial, a certain proportion of the population which have failed to receive adequate medical care, and not always because the individual was unable to pay. The medical profession has always adopted a liberal policy toward the poor. But

for the inclusion of the poorer classes, it would not have been possible to lengthen the period of life, reduce infant mortality and bring about a great reduction in morbidity and a gradual disappearance of epidemics of communicable or contagious diseases. It is particularly from the lower strata of life, owing to heredity, living conditions, and great over crowding, that disease is most prone to arise and spread to the upper levels of society. To render the public health-conscious at the present time is a more important consideration than the extension of a service that is already available to a greater extent than is made use of. If a betterment of the living conditions of the lower strata of society could be brought about under our present political system, it would be more far reaching in its beneficence than the futile attempt to improve their health under existing economic conditions.

The Majority Report recommends weekly or monthly fees in the form of insurance, taxation or both.

In the countries of Europe voluntary insurance has been, in nearly every case, replaced by compulsory insurance. This means, naturally, that the State must have financial control, and a situation created which might lead to a control of professional activities and to state medicine.

If group practice were the panacea for this problem, it has had a wonderful opportunity to flourish during these depression years; but statistics show that "groups" are disappearing for the lack of funds with which to operate. Their financial returns do not seem to justify the exhaustive method of diagnosis given to all patients, even with the pyramided fees resulting therefrom. In 80 per cent of all sickness the chance to get well is not from the diagnosis. The relation of the individual doctor and his patient must not be disturbed, and it does not appear possible to obtain this in group practice. Mass production is a fetish of the American people. They like to do things in a big way, but the average American will not submit to mass treatment when he is sick.

The whole is no greater than the sum total of its component parts. The individual doctor and his patient constitute a unit of medical service; adjust these and you solve the whole medical question. The county medical society is the logical unit of all medical organization. In my opinion, the biggest job that needs to be done is that involved in the reanimation and rebuilding of county medical societies. The county medical society has been neglected. I say this with the full knowledge of the fact that there are many very efficient county medical societies. But, I should like to point out that the problem appears to concern the whole profession, and I am clearly of the opinion that if the medical profession is to throw the weight of its authority behind any experiment, it must be done by county, state, and national organizations working in full accord and complete harmony.

I suggest that immediate steps be taken by the county units toward a solution of the problem of the indigent as well as of that large mass of the population who could and should pay a moderate

price for medical and hospital service. As the first step in this direction, I should like to see abolished the free clinic in its present form. If the State and other official organizations should absorb the care of the indigent sick, doctors would be in a better position to take care of the above class. In working out a solution of this problem it must be kept in mind that the government has already magnanimously entered into competitive business in a big way with the private practice of medicine, by opening the Veterans' Hospitals to certain civilians, not indigent, who never saw war.

Public opinion is a force of great weight. "We can do nothing without public opinion", said Abraham Lincoln. Dr. Ray Lyman Wilbur, realizing this, has created a new committee with Mr. Cooke, the engineer, at the head, to continue his researches and the new committee, according to the New York Times, has engaged that eminent publicity expert, Edward L. Bernays, to promote its views. This means shaping public opinion.

Some ninety per cent of the lay press is against the Majority Report. Newspaper comment on the Reports of the Committee on the Costs of Medical Care is so favorable to the physician and the chief Minority Report that, once more, faith is justified in the lay press as a national leader and guide. They are almost uniformly in accord with the sentiment of the medical press and assert with emphasis, that "no greater evil could befall a profession than to be brought under political control". This confirms a long established conviction that the lay press is a strong ally of the medical profession and can be depended upon for shaping public opinion.

Our own State Association, by virtue of its unique organization and closer relationship to all public health activities, occupies an advantageous position in furnishing the leadership toward the improvement of existing medical practice. Might not we, beginning with the county medical society and on up through our State Association to our national organization inaugurate some constructive movement, and thereby attempt to solve at least some of the many vexing problems now confronting the medical profession of the world?

In concluding this discussion of these reports, I would suggest that it might be well for this Association to create a standing Committee on Public Relations in accordance with the ordinance regulating the creation of standing committees.

Standing Committee on Cancer Control:—Since the cancer mortality rate has gradually climbed until it now occupies a place second only to heart disease and since Alabama is the only Southern State in which there is no organized effort for cancer control, I recommend the appointment of a strong, energetic committee of five men to be known as the Standing Committee on Cancer Control.

The American Society for the Control of Cancer is ready and willing to cooperate with all agencies attempting to control this fearful scourge. That organization has outlined a so-called "FIVE-YEAR PROGRAM FOR CANCER CONTROL" which gives data valuable for the organization

and prosecution of this work. The personnel of such committee should be carefully selected by the incoming President and he should be convinced that they are both qualified, interested and possess the energy to do justice to such an important undertaking. It has been my observation that most of our standing committees have made little or no effort to function. At the annual meetings they either ask for extension of time, state that no important work has been done, or report that everything is lovely. I can not too strongly urge the need of the appointment of an efficient committee from this Association for the carrying out of this life saving program.

Medical Practice Act:—Recently, a physician in this State brought suit to collect his bill from an estate. The defendant's lawyer found that his certificate had not been registered according to law and the physician was unable to collect.

Section 2842, Code of Alabama, 1923, as amended September 10, 1919, p. 851, regulating the practice of medicine, reads as follows: "A physician who receives a certificate of qualification shall within ten days after locating in a county file said certificate in the office of the judge of probate of such county for record, and should said physician remove his residence to another county, he shall within said time have his certificate recorded in that county. Any failure on the part of the holder of a certificate of qualification to comply with the provisions of this section within ten days after written notice so to do by the chairman of the county board of health shall render such certificate null and void".

The intent of this section of the Code was clearly not to rob the duly licensed physician of his legal rights, but rather to provide a proper and convenient system of recording in the several counties all those who had complied with the provisions of the law. However, inasmuch as the courts have held that a physician cannot recover unless this section of the law had previously been complied with, and, inasmuch as some physicians have failed to so comply, this question becomes one of considerable importance to the medical profession.

A bill has already been introduced into the legislature whereby certificates of qualification heretofore issued may be validated by being filed within six months period after this law takes effect. If and when this bill is passed, every physician, who has been derelict in this particular, should see to it that his certificate is placed on record in the office of the probate judge of the county in which he resides.

Liens:—The advent of the automobile and other forms of rapid transit has presented a new problem to the profession by the dumping upon them of many victims of accidents. Many of these cases are irresponsible and often leave their hospital, doctor and nurse unpaid. To protect the profession against this injustice, the American Medical Association has proposed a uniform state act concerning liens for money due physicians, dentists, nurses, hospitals and others for service rendered for the relief and cure of injuries caused by the fault or neglect of other persons. While

the medical profession unquestionably needs protection in this regard, I believe the proposed bill is impracticable, even though it could be passed by the legislatures of the individual states. Under this bill, a notice is required to be given by the physician, dentist, nurse or hospital to the insurer as well as the negligent person. This notice must be filed, under the proposed act, in the office of the clerk of the proper court in the county in which the professional, nursing or hospital services have been or are being rendered. The service of such a notice naturally leads the patient to suspect that his physician did not trust him. The profession should not be an encourager of damage suits and parties should be permitted to compromise any such claim. It would indeed be hard for the physician to ascertain who was at fault in causing the injury. I do believe, however, a uniform act should be passed that whenever a damage suit is filed for injuries caused by the fault or neglect of other persons and as an element of damage, there is claimed physicians, dentists, nurses, or hospital fees, which fees have not been paid, that the jury, or the court trying the case with a jury, should be required to ascertain and fix by their verdict reasonable fees for the physician, dentist, nurse or hospital rendering such services, and the verdict should specify the name of such physician, dentist, nurse or hospital and the amount calculated in the verdict for each and the law should provide that a judgment rendered in behalf of a plaintiff in such a case could not be satisfied unless the amount fixed by the jury as a reasonable service for such physician, dentist, nurse or hospital, is paid to the clerk of the court in which the judgment is rendered, and that the clerk of said court should by law be required to pay over such amount when paid into court to such physician, nurse, hospital, or to his or her orders.

Specialties:—The rapid growth of specialism in medicine has no doubt contributed to a considerable extent toward the increasing cost of medical care. It is true also that the attractive fees of specialists have contributed to the rapid growth of specialism. The habits of patients going directly to specialists and being referred from one specialist to another before a complete diagnosis of their condition can be made, instead of going to their family physician who would call a specialist in consultation if necessary, is an item of cost that could be prevented. About 80 per cent of all diseases can be treated by the general practitioner with the equipment in hand and at a great saving of cost to the patient if they could only realize this; but the psychology of the average layman is such that they attach undue value to so-called special service, with the result that the general medical man has been losing out and the specialist gaining in prestige.

We find no fault with specialism *per se*. The extent of our present knowledge makes it impossible for one man to become proficient in the practice of all its parts. Specialism has contributed remarkably to the advancement of medical science. It should not be curbed or restricted. The law of supply and demand will regulate that, but there is a need for the establishment of a standard of

excellence or proficiency by the means of which the profession and layman can judge of the efficiency of specialists.

All reforms in medicine must be voluntary to be effective and lasting. The education and training of the doctor makes this easy of accomplishment. Some of the eastern states have contemplated legislative enactment to control specialism. Such an approach should rightfully be viewed by physicians as repugnant both to their sensibilities and to their best interests.

The Council on Medical Education and Hospitals of the American Medical Association will, in all probability, at their next annual session, offer concrete suggestions as to how this problem may best be solved and it is my hope that this Association will take an active lead in this matter.

Universal education, the radio and the lay press are causing the people to think more deeply on all health matters. The President of our Association should create the opportunity to more frequently present the medical aspect of many economic problems to the public and to stress particularly the principles and policies of organized medicine. The suggestion is here made that it might be well for the President to devote at least a part of his message to topics of general interest to the public at large to be delivered at the evening session on Wednesday along with one or more other public addresses.

The Ethics of Our Profession:—The basic principles of medical ethics are not only the oldest of recorded documents, but its tap roots reach so far back into antiquity that even Hippocrates had much difficulty in tracing its original source.

Principles must not be confounded with etiquette. Principles and ideals do not change with the passage of time, for the reason that human relationships are a part of life itself. Etiquette, however, changes with the shifting conditions in social life.

What then is the relationship of these changing conditions to the principles of ethics of our profession? These fundamental principles should have greater weight now than ever before, because it is necessary to subscribe to these principles and to live according to them, if a physician wishes to retain an ethical status. The greatest bulwark that has ever been erected for the protection of the public in its relations to medicine, and the greatest bulwark of protection for physicians in their professional relation with the public and with each other is to be found in the principles of medical ethics.

A rigid adherence to the principles of medical ethics and a common sense regard for sound economic laws will go a great way in destroying those unsound and visionary schemes that are threatening to undermine the practice of medicine as a worthy institution.

A neglect and even contempt for ethics in the business world is a contributing cause of much confusion and discontent. This sentiment is being voiced by the United States Chamber of Commerce, the Rotary Club and other civic bodies who are advocating the inculcation of modern business principles into medicine.

However, I am in accord with the recently expressed views of Dr. Fishbein, that with the coming of group practice, hospital practice, of industrial practice, of factory practice, of the practice of medicine by corporations of physicians, of the practice of medicine by corporations of laymen who hire physicians on salaries, of insurance companies and many different types of organizations that have entered the medical field, a new situation confronts us in which the old rules of etiquette and customs cannot apply, and new rules and policies must be studied out and adopted to meet changing social conditions.

But the public must be educated more and more to the fact that the moral ideals and principles which have guided the medical profession since the beginning of time must not be permitted to perish, that the interest of patient is paramount to all others, and that the doctor must continue to dedicate his life to service for humanity. *From this position there can be no retreat.*

The President's Message was referred to the Board of Censors.

REPORTS OF OFFICERS

President Kirkpatrick asked for the report of the Senior Vice-President which, after presentation, was referred to the Board of Censors. The report follows:

Report of Senior Vice-President Mayer

The past year in the Southwestern Division has been spent by the Vice-President of that Division in working and urging the authorities to continue all-time health work. When I speak of authorities, I do not mean the medical authorities but have reference to those who have authority over the financial affairs of the counties. Under the stress of economic conditions and rapidly waning revenues of some of the counties, it has been a problem of great concern with many boards of revenue to supply their part of the money necessary to continue the work.

Much of my time has been spent with members of the Legislature, pleading with them not to cut the State appropriation for health work a greater per cent than is in keeping with the reduction of the cost of living and the reduction in the State's revenue, having in mind at all times that efficient work of the Health Department could not be maintained with a lean appropriation. We should not take a backward step in this department, for it is with pride that we call the attention of the medical profession and the State officials (as well as the general public) to the fact that Alabama leads the world in this great work.

It is a recognized fact that no citizenship can reach its highest attainment either mentally or morally unless it has perfect physical bodies to build on. This perfect physical body cannot be produced unless you have an efficient Health Department which realizes the necessity of scientific preventive medicine. This cannot be maintained without liberal revenue.

There have been many clinics held in the Southwestern Division, many sufferers have been relieved, and many children have been prevented from becoming suffering invalids and a care and expense to the State.

As my tenure of office expires at the close of this meeting, I am not unmindful of the great honor you have bestowed on me, and I take this occasion to express my deep gratitude to every member of the Association. In the future, as in the past, my work for organized medicine shall be untiring.

Dr. W. M. Salter, Anniston, Vice-President of the Northeastern Division, submitted the following report which was referred by the President to the Board of Censors:

Report of Vice-President W. M. Salter

Mr. President and Members of the Association:

I have not been as active in my duties as Vice-President of the Northeastern Division as I would like to have been. The stringency of the times has prevented my doing so.

Calhoun, Chambers, Blount, Etowah, Marshall, Madison, Talladega, Tallapoosa and Shelby Counties are the most active in the district. The above counties average 1 to 2 meetings each month. The smaller counties, Clay, Cleburne, Coosa, DeKalb, Jackson Randolph, St. Clair and Cherokee hold from 1 to 4 meetings during the year.

The doctors throughout the district are taking care of the indigent sick in a most excellent way. I do not believe any one has wanted for medical care. The sentiment in the district, so far as I can judge, is in favor of the Minority Report of the Committee on the Costs of Medical Care.

Two meetings have been held in the district during the year, April 1932 to April 1933. The first meeting was held at Scottsboro, June 3rd. Six papers were read as follows:

Cultivating the Child's Appetite, by Dr. Amos C. Gipson, Gadsden.

Diagnosis and Treatment of Fractures of the Pelvis, by Dr. E. V. Caldwell, Huntsville.

Case Report of Rocky Mountain Spotted Fever, by Dr. Hugh Boyd, Scottsboro.

Subacute Bacterial Endocarditis, by Dr. G. P. Haymore, Chattanooga, Tenn.

Epilepsy, Associated with Hyperinsulinism, by Dr. Seale Harris, Birmingham.

Otomycosis, by Dr. M. R. Moorman, Huntsville.

The members present at this meeting were entertained with a most delicious dinner by Dr. Hugh Boyd and his lovely wife in their home. A short time after this meeting the members of the Northeastern Division were shocked and grieved to learn of the sudden and untimely death of Dr. Boyd. Fifty-five members were present at this meeting.

The second meeting was held in Anniston, October 25th. The Calhoun County Medical Society acted as host. The members and guests were welcomed by Dr. J. D. Durden, President. Five papers were read as follows:

Postoperative Embolism, by Dr. Jerre Watson, Anniston.

Gynecologic Comments, by Dr. M. Y. Dabney, Birmingham.

Some of the Problems Confronting Organized Medicine in Alabama, by Dr. Sam Kirkpatrick, Selma.

Treatment of Diabetic Coma, by Dr. J. E. Paulin, Atlanta.

Management of Head Injuries, by Dr. Edgar F. Fincher, Atlanta, Ga.

A delicious barbecue dinner was served at the Alabama Hotel. Seventy-eight members and guests attended this meeting.

The members and guests who attend these district meetings are loud in their praise of the excellent and practical papers that are given.

Dr. G. W. Williamson, Vice-President of the Southeastern Division, rendered the following report which was referred to the Board:

Report of Vice-President Williamson

Two meetings were held in my division during the year. The first at Union Springs, on July 11, was addressed by Dr. W. H. McCaslan, subject—"Rheumatism in Children"; Dr. Clarence Weil, "The Handling of the Asthmatic Patient"; and Dr. Woodfin Cobbs, "Pneumothorax". A barbecue constituted the entertainment feature.

The second meeting was on October 12 at Luverne. Dr. Ralph Clements discussed "Neurocytoma"; Dr. Felix Tankersley read a paper entitled "Some Practical Points in Medicine and Surgery"; and Dr. John A. Martin discussed "The Female Urethra as a Source of Urinary Disorders".

The President of the Association, Dr. S. Kirkpatrick, was a guest of the division.

A chicken barbecue was served by the host society.

President Kirkpatrick asked for the report from the Northwestern Division and it was submitted as follows by Dr. E. D. McAdory of Cullman:

Report of Vice-President McAdory

Mr. President and Members of The Medical Association of the State of Alabama:

The Northwestern Division of the Association comprises the following sixteen counties: Bibb, Colbert, Cullman, Fayette, Franklin, Jefferson, Lamar, Lauderdale, Lawrence, Limestone, Marion, Morgan, Pickens, Tuscaloosa, Walker and Winston. There are about 835 doctors in the division. Six hundred fifty of this number are members of their respective medical societies. The county societies in the district held 115 meetings, 81 papers being contributed. While I have not visited all of the county societies, I have written to all of them and have received reports from twelve. The above is

based on the twelve reports. On July 14, 1932 the Cullman County Medical Society was host to the division. The meeting was called to order at 2 P. M. After a welcome address by Mr. M. L. Robertson, Mayor of Cullman, the following papers were presented: Dr. John A. Martin, Montgomery, "Endocervicitis"; Dr. E. V. Caldwell, Huntsville, "Intussusception"; Dr. W. H. Blake, Jr., Sheffield, "Obstruction Due to Postoperative Adhesions"; Dr. C. W. Shropshire, Birmingham, "Transurethral Resection of the Prostate Gland"; Dr. J. S. McLester, Birmingham, "Hyperthyroidism versus Hypothyroidism". After the meeting the Cullman County Medical Society entertained at a barbecue, which was very much enjoyed by all. There were 129 doctors present at the meeting.

The second meeting was scheduled for Morgan County at Decatur the latter part of November but on account of a severe influenza epidemic it had to be postponed until March, and was again postponed on account of the banking holiday.

I wish to recommend that the county medical society year be from April till April instead of from December to December, and that the officers of the county medical society be elected at their last meeting in March instead of in December as at present. My reason for this is that without considerable correspondence officers elected in December are not known to the State officers until the April meeting. I believe every county within my district would have reported this year if I had obtained the names of the newly elected secretaries.

I want to take this opportunity to thank those who have so thoroughly cooperated with me to make possible the above report.

The Secretary presented the following report which President Kirkpatrick referred to the Board:

Report of the Secretary

The membership of the Association as enrolled April 1, 1933 is 1,476, a decrease of 117 in the number recorded in my last annual report to you. A part of the loss is to be attributed to the failure of certain ones to continue their affiliation, the number of non-members having grown from 432 to 472. Further, the migration referred to in my report of a year ago has continued.

Death, also, has laid a heavy hand on our membership. Life Counsellors B. J. Baldwin and J. E. Wilkinson; Active Counsellors L. E. Broughton, S. G. Cardon, M. O. Grace and Sibley Holmes; and Members Hugh Boyd, J. T. Chapman, Samuel Clarke, W. J. Clark, J. M. Cobb, Edgar Collins, W. L. Dinsmore, J. W. Fennell, L. H. Ford, G. J. Greil, R. J. Griffin, F. D. Haston, L. C. Havens, A. L. Hayes, W. B. Johnson, F. F. Kimbrough, John Kimbrough, S. H. Mann, D. S. Moore, Sr., J. L. Perdue, J. M. Poer, J. O. Rush, T. H. Sewell, F. R. Sherard, H. J. Sims, W. W. Walls, and W. E. Wright are no longer among us. May they rest in peace.

At the last meeting of this body, Drs. R. B. Beard, F. H. Craddock, J. R. Garber, J. W. Jordan,

D. S. Moore, Jr., G. H. Moore, M. L. Shaddix, and D. H. Wright were chosen Counsellors-Elect. All except J. W. Jordan of the Fourth Congressional District have qualified and at the proper time should be added to the Roll of Active Counsellors.

The following officers of the Association are to be elected at this meeting: A president, a vice-president for the Southwestern Division, a treasurer, two members of the State Board of Censors for five years to succeed Drs. W. W. Harper and Fred Wilkerson, whose terms expire; and counsellors as follows: seven to succeed W. H. Oates, G. L. Gresham, W. E. Morris, W. M. Faulk, S. A. Gordon, F. A. Lupton, and J. S. McLester, who are to be elevated to Life Counsellors; three to succeed L. E. Broughton, M. O. Grace, and S. G. Cardon, deceased; one to succeed W. C. Miles, resigned; and one to succeed J. W. Jordan who is delinquent in dues. J. S. Tucker and R. H. Redden have completed their first terms of seven years; K. A. Mayer, F. W. Wilkerson, S. B. Alison, A. W. Ralls, V. L. Ashcraft, A. B. Price, and Cabot Lull have completed their second terms of seven years. According to constitutional provision, it becomes the duty of this body either to re-elect these counsellors or to fill any vacancies created.

As delegate and alternate delegate to the American Medical Association (to serve during 1933 and 1934), President Kirkpatrick named Drs. C. A. Grote and L. E. Broughton, respectively. On the death of Dr. Broughton, Dr. J. Harold Watkins was appointed alternate.

As delegate and alternate to the 1933 meeting of the Pan-American Medical Association, President Kirkpatrick appointed Jerre Watson and W. C. Hannon respectively.

In the places of those whose terms of service on the various committees of the Association expired with the 1932 meeting, the President appointed the following to serve five years:

Mental Hygiene.....	J. G. Bedsole
Prevention of Blindness.....	H. B. Searcy
Physicians--Druggists.....	W. H. Blake, Jr.
Hospitals.....	A. S. Frasier

Those whose terms of service on the Committees of the Association expire with this meeting are:

Mental Hygiene.....	T. C. Cameron
Prevention of Blindness.....	M. R. Moorman
Physicians--Druggists.....	N. G. James
Maternal Welfare.....	J. R. Garber
Military.....	Cabot Lull
Infant Welfare.....	J. W. Simpson
First Aid.....	J. D. Heacock
Hospitals.....	J. H. Blue

It will be the duty of the incoming president to fill these vacancies and to appoint two delegates to the American Medical Association to succeed Drs. R. S. Hill and J. N. Baker, whose alternates are Drs. W. F. Harper and L. W. Roe, respectively.

Respectfully submitted,
DOUGLAS L. CANNON.

The Treasurer of the Association, Dr. J. U. Ray, rendered his report as follows:

Report of the Treasurer

FINANCIAL STATEMENT

GENERAL ACCOUNT

Receipts

Cash brought forward from last report	\$ 7,520.03
Dues from 96 counsellors (Exhibit A)	960.00
Dues collected from county societies (Exhibit B)	4,050.00
Delegate fees (Exhibit C)	548.00
Interest on daily balance	177.88

Disbursements

Salary of Secretary:	\$ 600.03
Salary of Treasurer	303.00
Expenses of division meetings	85.56
Stipend to assistant in registration	10.00
Brown Printing Co., registration cards and programs	41.75
Premium on treasurer's bond	25.00
Battle House, clinic rooms	27.00
Brown Printing Co., stationery	70.44
Brown Printing Co., transactions and rosters	544.45
Brown Printing Co., forms	23.25
Legislative expense	254.00
Postage	50.68
Dues refunded Houston County	6.00
Delegate fees refunded	12.00
St. Louis Button Co., badges	22.50
Subscription to Journal, 1,446 members	2,892.00

Balance cash on hand	\$13,255.91	\$ 4,964.63
		8,291.28
	13,255.91	13,255.91

Recapitulation

Cash on hand.....	7,520.03	
Total receipts for year.....	5,735.88	13,255.91
Less total disbursements for year.....		4,964.63
		<hr/>
Balance cash on hand.....		8,291.28

Exhibit A

Counsellors and Counsellors-Elect Remitting Dues

Acker P. J. M.	Chenault, F. L.
Alison, S. B.	Craddock, F. H.
Ashcraft, V. L.	Crutcher, J. S.
Bailey, E. B.	Cryer, G. A.
Beard, R. B.	Dabney, M. Y.
Bedsole, J. G.	Doughty, M. E.
Brothers, T. J.	Dowling, J. D.
Broughton, L. E.	Dupree, M. W.
Burdeshaw, S. L.	Faulk, W. M.
Caldwell, E. V.	Garber, J. R.
Cannon, D. L.	Gordon, S. A.
Cardon, S. G.	Grace, M. O.
Chandler, J. C.	Gragg, V. J.

Granger, F. G.	Moxley, J. B.
Gresham, G. L.	Newman, S. H.
Hagood, M. H.	Noel, W. E.
Hatchett, W. C.	Noland, Lloyd
Hayes, C. P.	Nolen, J. A. M.
Heflin, H. T.	Oates, W. H.
Hendrick, W. B.	Oswalt, G. G.
Hill, R. L.	Price, A. B.
Hollis, J. S.	Ralls, A. W.
Holmes, Sibley	Redden, R. H.
Hough, J. S.	Rountree, W. S.
Howell, W. E.	Rucker, E. W.
Hubbard, T. B.	Sankey, H. J.
Hutchinson, W. H.	Scott, W. F.
Jackson, A. A.	Searcy, G. H.
James, A. D.	Searcy, H. B.
James, N. G.	Shaddix, M. L.
Kelly, E. L.	Shropshire, C. W.
Leach, Sydney	Sledge, E. S.
Lester, B. S.	Smith, R. A.
Lightfoot, P. M.	Speir, P. V.
Long, Clarence	Tankersley, Jas.
Lull, Cabot	Taylor, W. R.
Lupton, F. A.	Thomas, E. M.
Martin, J. C.	Tucker, J. S.
Mason, E. M.	Waldrop, R. W.
Mason, J. M.	Walker, A. A.
Mayer, K. A.	Walls, J. J.
McAdory, E. D.	Ward, H. S.
McCall, D. T.	White, A. L.
McLester, J. S.	Whitman, C. R.
Miller, W. T.	Wilkerson, F. W.
Moore, D. S.	Williams, M. J.
Moore, G. H.	Williamson, G. W.
Morris, W. E.	Wright, D. H.

Exhibit B

County Society Dues Collected at 1932 Meeting

Autauga	\$ 12.00
Baldwin	36.00
Barbour	36.00
Bibb	33.00
Blount	33.00
Bullock	27.00
Butler	45.00
Calhoun	102.00
Chambers	54.00
Cherokee	9.00
Chilton	24.00
Choctaw	30.00
Clarke	24.00
Cleburne	6.00
Coffee	42.00
Colbert	45.00
Conecuh	18.00
Coosa	12.00
Covington	54.00
Crenshaw	33.00
Cullman	36.00
Dale	27.00
Dallas	111.00
DeKalb	45.00
Elmore	45.00
Escambia	48.00
Etowah	123.00
Fayette	18.00

Franklin	48.00	Escambia	8.00
Geneva	42.00	Etowah	8.00
Greene	12.00	Fayette	8.00
Henry	21.00	Franklin	8.00
Houston	72.00	Geneva	8.00
Jackson	24.00	Hale	8.00
Jefferson	1,053.00	Henry	8.00
Lamar	36.00	Houston	8.00
Lauderdale	63.00	Jackson	8.00
Lawrence	30.00	Jefferson	28.00
Lee	54.00	Lamar	8.00
Limestone	24.00	Lauderdale	8.00
Lowndes	12.00	Lawrence	8.00
Macon	30.00	Lee	8.00
Madison	69.00	Limestone	8.00
Marengo	27.00	Lowndes	8.00
Marion	27.00	Macon	8.00
Marshall	42.00	Madison	8.00
Mobile	249.00	Marengo	8.00
Monroe	45.00	Marion	8.00
Montgomery	222.00	Marshall	8.00
Morgan	81.00	Mobile	12.00
Perry	18.00	Monroe	8.00
Pickens	36.00	Montgomery	16.00
Fike	60.00	Morgan	8.00
Randolph	33.00	Perry	8.00
Russell	6.00	Pickens	8.00
Shelby	42.00	Pike	8.00
St. Clair	30.00	Randolph	8.00
Sumter	30.00	Russell	8.00
Talladega	51.00	Shelby	8.00
Tallapoosa	36.00	St. Clair	8.00
Tuscaloosa	123.00	Sumter	8.00
Walker	102.00	Talladega	8.00
Washington	15.00	Tallapoosa	8.00
Wilcox	30.00	Tuscaloosa	8.00
Winston	27.00	Walker	8.00
		Washington	8.00
		Wilcox	8.00
		Winston	8.00

Counties delinquent: Clay and Hale

Exhibit C

Delegate Dues Collected at 1932 Meeting

Autauga	8.00
Baldwin	8.00
Barbour	8.00
Bibb	8.00
Blount	8.00
Bullock	8.00
Butler	8.00
Calhoun	8.00
Chambers	8.00
Cherokee	8.00
Chilton	8.00
Choctaw	8.00
Clarke	8.00
Cleburne	4.00
Coffee	8.00
Colbert	8.00
Conecuh	8.00
Coosa	4.00
Covington	8.00
Crenshaw	8.00
Cullman	8.00
Dale	8.00
Dallas	12.00
DeKalb	8.00
Elmore	8.00

Clay and Greene did not remit dues for delegates.
Cleburne and Coosa remitted for one each.

JOURNAL ACCOUNT

March 1, 1932-April 1, 1933

Receipts

Subscription of members	2,892.00	
Received from advertising	2,765.99	
Non-Member subscrip-		
tions	9.00	
Transactions sold	75.00	
Journals sold	1.00	
Rosters sold	2.00	
		5,744.99

Disbursements

March Number	402.79	
April	327.96	
May	303.97	
June	475.13	
July	547.08	
August	308.89	
September	360.70	
October	315.35	
November	389.73	
December	346.07	
January	430.09	
February	382.55	
March	344.11	4,934.42
Standing matter	42.50	
Binding and distributing		
85 copies Vol. 1	91.36	
Subscription receipts	20.37	

Directory, A. M. A., supplement	5.00		
Postage on Journals	56.98		
Reporter of 1932 meeting	278.98	495.19	5,429.61
Balance cash on hand			315.38
		\$5,744.99	\$5,744.99

Recapitulation

Receipts	5,744.99	
Disbursements		5,429.61
Balance cash on hand		315.38
	\$5,744.99	\$5,744.99

REPORTS OF COMMITTEES

Report of the Committee of Publication

Fred Wilkerson, Chairman

It will be sufficient to record (1) that, pursuant to the wishes of the Association, proceedings of the 1932 meeting were distributed, as a reprint from the Journal, to all members; and (2) that the Journal has continued to merit the support of the profession. The financial aspects of these items have been dealt with in detail in the Treasurer's report.

Maternal Welfare

J. R. Garber, Chairman

The Committee reports no field activities in the past year. As outlined in previous reports, the Committee is still of the opinion that more definite rules and regulations governing maternity work in Alabama must be formulated and authorized by the Board of Censors and the Association before any material advance can be made in its work. This curriculum must be both administrative and legislative in scope. Again the attention of the Association is called to the recommendations of the Committee made in its report April 1926. During the past year a report of the study of maternal mortality in Alabama for 1927-1928 was made jointly by the United States Children's Bureau and the State Board of Health of Alabama. A thorough review of this report brings to light illuminating facts though void of characteristics that would appeal to the pride of the medical profession of the State. It points out the high mortality rate of women in childbirth and conclusively shows that much of the mortality recorded is from conditions that are preventable. In conjunction with this revelation one is impressed with the character of services rendered by the obstetrical attendant, which is far from emulating accepted and universal obstetrical doctrines and teachings.

The Committee recognizes that for purposes of comparison maternal death rates must be based on standard classification of causes. Since the number of births is used as the denominator in determining this rate, it is evident that absolute accuracy depends on complete reporting of births and deaths from these causes. In this connection it may be stated that it is estimated that over five thousand births and between fifteen hundred and two thousand deaths are unreported each year in Alabama. Therefore, complete registration is an initial requirement to accurate expression of the hazards of maternity.

The Committee believes that study of the component causes going to make up the gross maternal mortality may show that some progress has been

made since 1928 in the care of women at childbirth. In considering those causes dependent on care at delivery, it is obviously necessary to exclude abortions and conditions outside the control of the accoucheur. In so far as possible the State Health Department should prepare tables giving these data.

1. The maternal mortality rate in Alabama during the two years was 87 per 10,000 live births, which was approximately 20 in excess of that for the United States Birth Registration Area during the same period.

2. Puerperal septicemia caused 58% of the deaths of women who had not reached the last trimester of pregnancy and only 29% of those in the last trimester. For the whole group, 35% died of puerperal septicemia.

3. Puerperal albuminuria and convulsions caused only 17% of the deaths before the last trimester and 42% of those during that period. Deaths from this cause were 37% of the total.

4. After excluding cases of induced abortions, pregnancies of two months or less duration, and those for which the information was not obtained 78% of 935 women had no prenatal care by physicians, and only 4% had good care as defined in the report.

5. Physicians attended at confinement only 72% of the women who died after reaching the last trimester. 24% were attended by midwives, and 4% were unattended by either physicians or midwives.

These facts should bring to the profession a realization that many of these deaths could have been prevented, and indicate in a general way, the avenues of approach toward reduction of maternal dangers. Prenatal care by physicians is of especial value in the prevention of deaths from albuminuria and convulsions, which combined to form the largest single cause. It is impressively evident that no woman should be allowed to die at, or after, confinement because of lack of a physician's care, and that all cases in which such danger is apparent should receive medical attention. In this connection it is interesting to note that in 1932 nearly 1,000 less midwives were registered in the State than in 1931. This decrease was largely effected through culling out those who failed to abide by the regulations governing midwife practice, among which is the requirement that a physician be summoned in difficult or dangerous cases. It should ever be an incentive to the attending physician that the watching midwife develops her ideas of precautionary cleanliness largely from the conduct she observes.

In the furtherance of knowledge upon which the progressive development of safe practice may be founded, the following resolution is introduced:

WHEREAS, The development of preventive measures must continue to depend on a knowledge of unsatisfactory conditions as they exist and events as they occur, and

WHEREAS, The dangers of pregnancy and childbirth in Alabama are such as to demand the most serious thought of the medical profession; therefore be it

Resolved, That the Board of Censors of the Medical Association of the State of Alabama be

requested to bring to the attention of the Association the need for complete registration and accurate certification of deaths due to the maternal state; and be it further

Resolved, That in addition to the usual tables of puerperal mortality, tables showing non-puerperal conditions associated with deaths allocated to puerperal causes, as well as tables showing deaths allocated to non-puerperal causes which show association with pregnancy and childbirth, should be prepared; and be it further

Resolved, That it be recommended that in counties with organized health units, as far as possible, every maternal death, or those suspected of being maternal, should be investigated by the health officer to determine the correctness of allocation and other conditions; and be it further

Resolved, That an abstract of the report submitted by The U. S. Children's Bureau be printed in The Journal of this Association sometime during the year; and be it further

Resolved, That the State Health Officer be requested to make further analyses of maternal problems and deaths; that the profession be requested to give sympathetic aid in the collection of needed data; and that the result of such studies be brought to the attention of the membership of this Association in suitable ways and as opportunities present.

Committee on First Aid

J. D. Heacock, Chairman

Mr. President and Members of the Association:

Under the caption of modern health movements nothing stands out more prominently than first aid activities.

In spite of adverse circumstances industrially and otherwise, first aid processes have gone on apace.

The number of cases handled during the past year are naturally smaller on account of the unemployment situation, but in the mines, in the schools, and in the communities of our State the same ambitious program of the last three years has been maintained.

The Alabama Safety Council, with its various units throughout the State, has been a valuable adjunct and has helped to make secure a very comprehensive program. This institution, together with the public schools, promulgates the idea of converting safety knowledge into safety habits, while on the other hand the specific work of the first aid movement is to quickly apprehend and treat casualties. These efforts are not restricted to traumatic injury and accidents, however, but are directed to other occupational mishaps, such as faints, acute heart disease, apoplexy, etc., all of which no doubt will have their effect in liberalizing the Workman's Compensation Act, thereby perhaps creating an instrument whose economic phase will be more equable.

The correlation of methods between the Holmes First Aid Agency, the Safety Council, Red Cross and the schools begets a magnificent set up for fine service. There is a certain amount of romance as well as virtue in this very plausible effort for the sake of humanity which it seems is not quite fully appreciated.

Your Chairman was recently favored with a report of the Olympic Games held last year in California, and the graphic details of the first aid maneuvers were indeed heartening to scientific and systematic efforts along these lines; all of which might be mentioned again as being the fruition of correct hygiene and sanitation as is being propagated by our own State Health Department.

The following report for 1932 from the Alabama Council of the Holmes Safety Association completes the story.

6,418 were given first aid training and 145 given mine rescue training in Alabama during 1932.

The accident prevention training course was conducted at four places in Alabama and 48 were recommended for certificates.

There were 11 mines recommended for 100% first aid certificates and 4 were given renewals of their 100% certificates.

Infant Welfare

Jno. W. Simpson, Chairman

The Committee on Infant Welfare desires to submit the following report for the year 1932-33: Owing to the unsettled condition of the past year it has not been possible for the Committee to conduct very active work over the State. Problems which have arisen have been handled individually, by correspondence, and it is gratifying to note the increased readiness of response on the part of the doctors of the State.

There has been organized during the past year a newborn service at the Hillman Hospital of Jefferson County, which is very active, and whose work has already begun to show results as the outcome of more intensive study of the newborn. This work is under the charge of Drs. S. P. Wainwright and J. P. Chapman. Establishments of such services are very important in the care of infants, and it is hoped that similar services may soon be instituted in other medical centers of the State.

The Committee feels that the coming year is perhaps the most inviting opportunity for work that has been presented to the profession. It will be incumbent upon the private physician to secure to the communities many preventive measures that have heretofore been offered by other agencies. It will be necessary to follow up more intensively the work and suggestions of the White House Conference. The responsibility of the parent and the doctor for the protection of the young child against preventable diseases must be made widely known. The necessity for providing infants with more supervision by the doctor must be more impressed upon the laity and even the medical profession. With failing taxation and government revenues, these measures become the responsibility of the physicians, without in any way reducing the duty of the individual parent to bear his portion of the incident expense. Protection should be worth more to the child and his family than to anyone else.

With these problems facing us, the Committee plans intensive action and bespeaks the cooperation of the State Association and its individual members.

Military Affairs

Cabot Lull, Chairman
Ross C. Speir, Vice-Chairman

A doctor who holds a commission in the Medical Reserve Corps of the United States Army is an important factor in our scheme of National Defense. The National Defense Act of June 3, 1916 with its major amendment of June 4, 1920 constitutes the Magna Charta of our National Defense. Allegiance to this should be maintained by members of the Medical Association of the State of Alabama who have World War experience and should be patriotically assumed by the younger doctors. Although it is a skeleton peace-time establishment, it provides for easy, rapid and effective mobilization in event of war.

Under this Act our National Defense is being gradually developed on a sound foundation and at a minimum expense. The very fact that it is a workable scheme apt to produce results in an emergency is incurring for it the enmity and hostility of many pernicious elements that strive to make our Nation helpless. A thorough educational system along medico-military matters has been established. This is through the medium of special service schools, of general service schools and the Army War College. The Field Service School for doctors has been established at Carlisle Barracks, Pa., and has instructed hundreds of doctors of the regular Army Medical Corps of the Organized Reserve and of the National Guard since its establishment.

It might be interesting to this Association to quote some figures. The Medical Department of the Army at the present time comprises the Medical Corps, the Medical Administrative Corps, Sanitary Corps, Dental Corps and Veterinary Corps. These same classifications are maintained in the Organized Reserve Corps on an active and inactive status. Listed in the active corps we find some interesting figures as follows:

	Brig. Gen.	Col.	Lt. Col.	Major	Capt.	1st Lt.	2nd Lt.	Total
Medical Corps	3	282	763	1,190	945	5,130		8,313
Medical Administrative Corps					232	348	848	1,428
Sanitary Corps		2	24	83	5	63	103	280
Dental Corps		5	43	326	631	2,807		3,812
Veterinary Corps		1	23	73	118	82	330	627

We will also quote the figures given for those now listed as on inactive status, or officers who have been commissioned but for some reason have not kept alive their interest in these matters. This list is as follows:

	Brig. Gen.	Col.	Lt. Col.	Major	Capt.	1st Lt.	2nd Lt.	Total
Medical Corps		28	91	460	741	1,176		2,496
Medical Administrative Corps					87	145	321	553
Sanitary Corps		1	1	15	46	39	43	145
Dental Corps			1	49	307	1,112		1,469
Veterinary Corps			1	12	62	55	158	288

The above figures are exclusive of those commissioned in the various National Guards of the forty-eight states. These figures will give evidence to the indifference of the medical profession and of those interested in administrative and sanitary matters and also of the dental and veterinary professions, in the seeking of commissions in the Organized Reserve.

It is the unanimous conclusion of the members of the Military Committee that this is an appropriate time for an awakening of reserve consciousness among doctors. An appeal is made particularly to the recent graduates of medical colleges. A young doctor who receives a commission as First Lieutenant in the Medical Reserve Corps will find valuable, pleasant and worth-while association.

There are fourteen day training camps offered each year which are highly educative and profitable. He will be kept informed through correspondence courses and helpful bulletins from the War Department and from the Medical Field Service School, also from his Corps Area Headquarters. The news and editorial columns of all progressive newspapers now abound in commendatory references to the value of the Organized Reserve in our National defense. The young doctor will be stirred by the thought that he is an important cog in this, his country's scheme for defense against danger and peril. The members of the Military Committee hope that the next twelve months will record a large number of additions to the Medical Reserve Corps of the United States Army from the medical profession of the State of Alabama.

The reports of the several committees were referred by the President to the State Board of Censors.

Miscellaneous Business

The following ordinance and amendment to the ordinances of the Association, introduced by the Secretary at the request of Dr. Seale Harris, were referred to the Board:

Ordinances Relating to Contracts of Physicians With Insurance, Accident and Casualty Companies

FOREWORD

The Medical Association of the State of Alabama considers health and accident insurance advisable for individuals or groups of individuals, when the policy holder receives a stipulated sum of money per diem or weekly, while incapacitated from illness or injury and which, according to the terms of the policy, allows the insured individual to select his own physician and hospital. The Association, however, looks with disfavor, as being dangerous to the maintenance of high ideals of the practice and ethics of the profession of medicine, on the type of health or accident insurance in which the company provides or selects the physician, or surgeon, and the hospital, for its policy holders. In other words the Medical Association of the State of Alabama is opposed to the prac-

tice of medicine and surgery, and the maintenance of hospitals, by insurance companies or other commercial corporations or organizations.

Be it ordained by the Medical Association of the State of Alabama:

Section 1. That a physician, without violating the ethics of the profession, may contract to render the following service, either for a stated salary or on a fee basis, which shall be commensurate with the professional service rendered and expressed in terms as near as possible of the usual medical fees, which prevail in the locality in which the physician resides.

Subsection 1. To perform surgical service, in so far as accidents are concerned, for employees of a corporation that carries group accident insurance for its employees.

Subsection 2. To serve as examiner, or medical director, or medical referee for an insurance company that is engaged in the business of life, health or accident insurance.

Subsection 3. To perform service either on a salary or fee basis to examine, for purposes of report on individuals who are ill, or who have received injuries and who carry individual health or accident policies in an insurance, accident or casualty company.

Be it further ordained by the Medical Association of the State of Alabama:

Section 2. That a physician shall not, without violating the ethics of the profession, contract with, or be employed by an insurance, accident or casualty company to render the following service:

Subsection 1. To perform medical and surgical services for individuals, or the families of individuals, who carry health or accident policies in insurance, accident or casualty companies.

Subsection 2. To perform medical and surgical services for groups of policy holders in insurance, accident or casualty companies, except for groups insured by corporations which are responsible for the accidental injuries to their employees according to the compensation laws of the state of Alabama.

An Amendment to the Ordinances of the Medical Association of the State of Alabama Relating to Hospital Practice by Its Members.

Add to Section 2, page 62 of the Red Book the following:

Subsection 3. To perform medical and surgical services in a hospital or clinic, that for a weekly, monthly, quarterly or annual stipend or stipend collected at other intervals, agrees to provide hospital service for individuals, or groups of individuals, except in a hospital with which contracts are made by a railway, mining, manufacturing, or public service company, for the care of their sick or wounded employees.

Whereupon at 12:30 P. M. a recess was taken until 2:30 P. M.

Afternoon Session, Tuesday, April 18
2:30 O'clock

Dr. H. E. Simon, Birmingham, presented a paper entitled "The Clinical Syndromes

of the Surgical Spleen" which was discussed by Dr. Haywood Bartlett, Montgomery.

Dr. H. R. Cogburn, Mobile, read a paper on "The Scope of Dermatology" which was discussed by Dr. Earle Johnson of Montgomery.

The third paper of the afternoon was "Hematuria: Its Great Significance" by Dr. Emmett B. Frazer, Mobile. The paper was discussed by Dr. L. L. Hill, Jr., Montgomery; Dr. J. G. Bedsole, Jackson; Dr. W. W. Harper, Selma; and Dr. H. S. Bruce, Opelika.

Dr. J. F. Yarbrough, Montgomery, presented a paper on "Acidemia: Its Relation to Chronic Disease" which was discussed by Dr. T. Brannon Hubbard of Montgomery.

At 5:00 P. M. a recess was taken until eight in the evening.

Evening Session, Tuesday, April 18
8:00 O'clock

Dr. J. R. Garber, Birmingham, read a paper entitled "Prophylaxis in Labor" which was discussed by Dr. A. E. Thomas of Montgomery.

Dr. K. A. Mayer presented the President of the Association, Dr. S. Kirkpatrick, who delivered an address on "The Contributions of Medicine to Civilization".

The President resumed the chair and introduced Dr. R. Wesley Scott of Cleveland, Ohio, who discussed "Clinical and Pathological Observations in 2,000 Cases of Cardiovascular Disease". Discussants of the paper were Dr. H. R. Carter, Birmingham, and Dr. Clarence Weil, Montgomery.

Whereupon at 11:30 P. M. adjournment was taken until 9:00 A. M. of the second day.

Second Day, Wednesday, April 19

The session was called to order at 9:00 A. M. by the President, whereupon, under miscellaneous business, Dr. M. Y. Dabney introduced the following resolution which was referred to the Board:

Resolution of Dr. M. Y. Dabney

WHEREAS, The personnel of the central office of the State Health Department has been and in the future will be even more reduced, and

WHEREAS, The duties of the remaining members of the staff of necessity will be increased immensely, and

WHEREAS, The Assistant State Health Officer, Dr. Douglas L. Cannon, who in the past has shouldered much of the responsibility of editing the *Journal*, must now be used to a greater extent for field work, and

WHEREAS, Under existing conditions if unremedied the quality of the *Journal* must suffer consequent deterioration; therefore be it

Resolved, That this Board recommends to the Association that additional editorial and clerical assistance be employed in order to maintain the high standard which the *Journal* has so far attained; and be it further

Resolved, That to this end the Board recommend the appropriation by the Association of a sum not to exceed one thousand dollars (\$1,000) per annum, part or all of which may be used, for defraying such expense.

The first paper of the morning, "Hypothyroidism, With Particular Reference to Its Cardiac Complications", was read by Dr. John E. Walker, Opelika. It was discussed by Dr. Seale Harris, Birmingham; Dr. William Hannah, Montgomery; Dr. Dean Lewis, Baltimore; and Dr. W. W. Harper, Selma.

A symposium on Bright's disease was opened by Dr. J. S. McLester of Birmingham who dealt with "The Nature and Course of the Disease". Dr. Monroe A. Maas, Selma, presented "Grades of Severity Evaluation; Outlook". The symposium was concluded by Dr. Fred Wilkerson, Montgomery, who discussed "The Treatment of the Disease". Discussants were Dr. Hugh Morgan of Vanderbilt University; Dr. C. A. Grote, Huntsville; Dr. P. H. M. Tippin, Brewton; and Dr. R. Wesley Scott of Cleveland.

The Jerome Cochran Lecture was delivered by Dr. J. Shelton Horsley of Richmond—the subject, "Cancer of the Stomach and Colon".

Miscellaneous Business

On motion by Dr. R. S. Hill, a rising vote of thanks was accorded Dr. Horsley.

The Secretary announced the vacancies in the College of Counsellors and designated a time and place of meeting of committees constitutionally appointed to fill the vacancies.

At 12.30 P. M. a recess was taken until 2:30 P. M.

Afternoon Session, Wednesday, April 19

The meeting having been called to order by Vice-President Salter, the following

resolution was introduced by Dr. R. S. Hill and referred to the Board of Censors:

Resolution of Dr. R. S. Hill

WHEREAS, There are nine Congressional Districts in the State, and

WHEREAS, There are ten Censors composing the Board of Censors, and

WHEREAS, There are four of the nine Congressional Districts with no representation on the Board of Censors, and,

WHEREAS, This constitutes an inequality and injustice in the representation on the Board of Censors which is not warranted at this period of our professional development, and transportation facilities, and

WHEREAS, The Board of Censors is beyond question the most important body in the State organization and should indisputably fairly represent every section of the State; therefore be it

Resolved, That Article VIII, Section 2 of the Constitution of the Medical Association of the State of Alabama as it relates to the election of Censors be amended by adding that each vacancy occurring henceforth on the Board of Censors shall be filled by the election of a qualified member of the Association from one of the Congressional Districts that has no representation on the Board with the single exception of one member from the State at large, who however shall not be at the time of his election from any Congressional District with more than one representative on the Board.

Dr. M. T. Davidson of Birmingham introduced the resolution set forth below which likewise was referred to the Board:

Resolution of Dr. M. T. Davidson

The Committee on the Costs of Medical Care has made its final reports. Although this Committee had no official status either with the national government or with the American Medical Association, the high standing and wide prominence of its members gives great weight to its pronouncements.

In the general state of finances, most if not all physicians are very seriously affected. With incomes greatly reduced, and in some instances almost completely destroyed, we are inclined to accept any suggestions which seem to offer even temporary help over the crisis. This fact seems to magnify the importance of suggestions coming from prominent sources.

Revolutionary changes in our code of ethics as well as in our State Constitution would be necessary before the recommendations contained in the Majority Report of the Committee could be put into effect. The Minority Report charges that the majority reached their conclusions on insufficient and unsatisfactory evidence.

Our President in his message substantially endorses the Minority Report.

At the next meeting of the American Medical Association to be held in Milwaukee in June 1933,

the recommendations of the Majority and Minority Reports will be discussed and some action taken.

In view of the facts therefore be it

Resolved, 1st. That the Alabama State Medical Association endorses the Principal Minority Report of the Committee on the Costs of Medical Care. The recommendations are as follows: (Opposite Page 151, Medical Care for the American People.)

(1) The Minority recommends that government competition in the practice of medicine be discontinued and that its activities be restricted (a) to the care of the indigent and of those people with diseases which can be cared for only in government institutions: (b) to the promotion of public health: (c) to the support of the medical departments of the Army and Navy, Coast and Geodetic Survey, and other government services which cannot, because of their nature or location, be served by the general medical profession: and (d) to the care of veterans suffering from bona fide service-connected disabilities and diseases, except in the case of tuberculosis and nervous and mental diseases.

(2) The minority recommends that government care of the indigent be expanded with the ultimate object of relieving the medical profession of this burden.

(3) The minority joins with the Committee in recommending that the study, evaluation and coordination of medical services be considered important functions for every state and local community, that agencies be formed to exercise these functions, and that the coordination of urban with rural services receive special attention.

(4) The minority recommends that united attempts be made to restore the general practitioner to the central place in medical practice.

(5) The minority recommends that the corporate practice of medicine, financed through intermediary agencies, be vigorously and persistently opposed as being economically wasteful, inimical to a continued and sustained high quality of medical care, or unfair exploitation of the medical profession.

(6) The minority recommends that methods be given careful trial which can rightfully be fitted into our present institutions and agencies without interfering with the fundamentals of medical practice.

(7) The minority recommends the development by state or county societies of plans for medical care.

Resolved, 2nd. That the Alabama State Medical Association point out to its members that no changes have been made recently in its Code of Ethics or its Constitution and By-Laws.

Resolved, 3rd. That this Association recommend to its members that no new or revolutionary departures from our present forms of practice be considered.

In opening the scientific program, Dr. Robert Parker, Montgomery, read a paper

on "Coeliac Disease—Chronic Intestinal Indigestion" which was discussed by Dr. W. M. Salter, Anniston; Dr. S. P. Wainwright, Birmingham; and Dr. T. J. McElhenney, Bessemer.

Dr. H. M. Simpson, Florence, presented a paper entitled "Incidence of Mental and Nervous Manifestations in Internal Medicine: Review of One Hundred Cases". Discussants were Drs. J. W. Mehaffey and H. S. Ward of Birmingham.

Dr. Hugh J. Morgan of Vanderbilt University presented a paper entitled "Thomson's Disease: A Clinical Study" which was discussed by Dr. Groesbeck Walsh, Fairfield; Dr. J. Alto Ward, Birmingham; and Dr. J. F. Yarbrough, Montgomery.

The last essayist of the afternoon was Dr. J. Harold Watkins of Montgomery who read a paper on "Coronary Occlusion", discussed by Dr. T. K. Lewis, Birmingham, and Dr. William Hannah, Montgomery.

Whereupon at 4:55 P. M. an adjournment was taken until 8:00 P. M.

Evening Session, Wednesday, April 19

Public Meeting

The session was called to order at 8:00 P. M. by the President who presented as the first speaker of the evening the President-Elect of the American Medical Association, Dr. Dean Lewis of Baltimore. Dr. Lewis used as his subject "Medical Problems Confronting the Medical Profession".

Dr. Irvin Abell, President of the Southern Medical Association, concluded the program with an address entitled "Some Recent Contributions of Science to the Field of Medicine".

At 9:45 P. M. adjournment was taken until 9:00 A. M. of the third day.

Third Day, Thursday, April 20

The session was called to order at 9:00 A. M.

Dr. J. H. Dodson, Mobile, presented a paper on "A Consideration of Some of the Anatomic Structures Dealt With in Treating Ano-Rectal Diseases", which was discussed by Dr. W. W. Harper, Selma.

Dr. A. S. Frasier, Dothan, read a paper entitled "Acute Osteomyelitis".

It was discussed by Dr. W. D. Gaines, Lafayette; Dr. Earle Conwell, Fairfield; Dr. W. W. Harper, Selma; and Dr. J. D. Standifer of Blakely, Ga.

Dr. Robert Carothers, Cincinnati, presented a paper on "Ankle Fractures" which was discussed by Dr. Earle Conwell, Fairfield; Dr. John Martin, Montgomery; and Dr. J. B. Graham, Talladega.

The next paper of the morning's session was contributed by Dr. Frank K. Boland of Atlanta—his subject, "Differential Diagnosis of Abdominal Tumors". The paper was discussed by Dr. A. C. Jackson, Jasper, and Dr. D. C. Donald, Birmingham.

The concluding contribution was "The Curability of Cancer of the Right Colon" by Dr. Fred W. Rankin of Lexington, Ky. Dr. E. V. Caldwell, Huntsville; Dr. J. M. Mason, Birmingham; Dr. Frank K. Boland, Atlanta; and Dr. W. R. Meeker, Mobile, were discussants.

Miscellaneous Business

At the request of Dr. J. B. Moxley, the following resolution was introduced by the Secretary and referred to the Board:

Resolution of Dr. J. B. Moxley

Resolved, That it is the sense of the Medical Association of the State of Alabama that this Association should perpetuate the memory of its deceased members by designating a committee to be known as a Committee on Necrology, composed of the Secretary of this Association as Chairman, together with the President and Secretary of the respective County Medical Societies, whose duties it should be to prepare and read before this Association at its annual meetings the biography of such member or members who have died since the last annual meeting, and shall be printed in the Journal along with other papers of this Association.

Likewise, at the request of Dr. E. M. Mason, the Secretary introduced the following resolution which was referred to the Board of Censors:

Resolution of Dr. E. M. Mason

From the dawn of the earliest centuries and on through the ceaseless lapse of time there has never been, nor will there ever be, a period in the evolution of mankind wherein civilization has failed or will fail to reap the blessings of medical science. As the science of medicine has been explored and mastered, the human race has utilized the resulting knowledge for its material advancement and for the perpetuation of happiness and contentment. Today, as through the ages, man has found little compensation in the possession of abundant riches when denied the enjoyment of bodily well-being. All too frequently, the agencies afforded man in his combat for existence and quest of a career become too commonplace, and

thereby suffer a distinct depreciation in value. Indifference, lack of information, the evils of reactionism all tend to check the wheels of progress, to deprive the citizen of the necessary means for fulfilling his objectives in life.

The citizens of Alabama, through a State Health Department that has won an admired recognition, both nationally and internationally, have been protected from the scourges of diseases that history records as having laid waste vast empires and that have destroyed armies in greater proportions than the instruments of warfare. To recount the blessings bestowed upon the State of Alabama through an efficient health organization would be as futile as an attempt to change the tides of the sea. With these thoughts in mind the following resolutions are offered:

WHEREAS, The Medical Profession, through its various instrumentalities, has been authorized by the citizens of Alabama to be the guardians and custodians of public health, and,

WHEREAS, The Medical Profession has willingly accepted the call of service and responsibility on behalf of the citizens of Alabama, and,

WHEREAS, ONLY the Medical Profession possesses the knowledge of the causation and treatment of disease and ALONE is preeminently qualified to formulate programs and administer upon matters of health, and,

WHEREAS, The appropriations for health protection to the people of this State have already been reduced to such extent that it is the feeling of the medical profession that any further curtailment in the activities of the Health Department would seriously jeopardize not only the health, but the commercial and industrial interests of the State; therefore be it

Resolved, By the Medical Association of the State of Alabama, in annual session assembled, that a message of continued and interested stewardship of public health be transmitted to the citizens of the State from this Association; and be it further

Resolved, That the members of the Medical Association of the State of Alabama fully recognize the unparalleled and uncontrollable emergencies created by the present world economic distress which necessitates readjustment in the established order of things and endorses an equitable prorata share of reduced appropriations for public health work in the plan for economy; and be it further

Resolved, That the Medical Association of the State of Alabama deplors the apparently discriminatory acts that place in jeopardy the basic structure of public health activities in Alabama, which work is an imperative and indispensable need at all times, but is especially so now; and be it further

Resolved, That the Medical Association of the State of Alabama petitions the Governor and legislative body of the State to use all reasonable ways and means to promote the welfare and continue the health work for its citizens through their State Health Department; and be it further

Resolved, That the Medical Association of the State of Alabama bespeaks for the public

health agency and health officer of Alabama a consideration comparable to any other activity of the government.

Whereupon at 1:05 P. M. recess was had until 2:30 P. M.

Afternoon Session, Thursday, April 20

Dr. Geo. S. Graham, Birmingham, read a paper on "The Identification of Cancer Cells in Serous Fluids as a Diagnostic Measure" which was discussed by Dr. Cabot Lull, Birmingham.

Dr. S. L. Ledbetter, Jr., Birmingham, presented a paper entitled "Congenital Pyloric Stenosis". It was discussed by Dr. W. R. Meeker, Mobile, and Dr. A. A. Walker, Birmingham.

Dr. John D. Sherrill of Birmingham discussed "Ununited Fracture of the Neck of the Femur".

At 3:45 P. M. the Association adjourned for a barbecue at the home of Dr. and Mrs. R. S. Hill.

Evening Session, Thursday, April 20

8:00 P. M.

Dr. Walter Scott, Birmingham, presented a paper entitled "Prostatic Resection—Its Limitations and Complications" which was discussed by Dr. Drayton Doherty, Selma; Dr. E. G. Ballenger, Atlanta; Dr. J. C. Pennington, Nashville; Dr. C. W. Shropshire, Birmingham; Dr. J. U. Reaves, Mobile; and Dr. T. Brannon Hubbard, Montgomery.

Dr. John J. Shea, Memphis, presented a paper on "The Management of Fractures of the Facial Bones".

Dr. R. E. Semmes, Memphis, contributed a paper on "Head and Brain Injuries".

The papers of Drs. Shea and Semmes were discussed by Dr. W. B. Westcott; Montgomery, and Dr. Harvey Searcy of Tuscaloosa.

Whereupon an adjournment was taken until 9:00 A. M. Friday, the fourth day.

Fourth Day, Friday, April 21

The Association, sitting as the Board of Health of the State of Alabama, was called to order at 9:00 A. M. by President Kirkpatrick.

The report of the Board of Censors was rendered by the Chairman of the Board, Dr. W. D. Partlow.

THE SIXTIETH ANNUAL REPORT OF THE STATE BOARD OF CENSORS, INCLUDING ITS REPORT AS THE STATE BOARD OF MEDICAL EXAMINERS AND AS THE STATE COMMITTEE OF PUBLIC HEALTH

W. D. PARTLOW, M. D., Chairman

Part I

The Board of Censors begs to submit this, its Sixtieth Annual Report:

Foreword

Before submitting to this Association a brief summary of the more important activities which have claimed the attention of this Board during the past year, a word of exhortation and counsel seems appropriate. The profession of medicine, with its age-old heritages and traditions, with all its humanistic traits, with its concepts of service pitched far above a greed for gain, this, our profession, finds itself to-day struggling to adjust its activities to a new and changing social order. From birth to death, the hand of the healer is at some time implored by every human being. Our determination must be to see that this ministering hand preserves those qualities of scientific training and sympathetic touch which has ever characterized the art of medicine and which is the just due of all. The human, no less than the scientific, factors cannot be permitted to perish.

The voice of the medical profession—local, state and national—must be oftener heard in all appropriate places and on all appropriate occasions. In the council chambers and in the legislative halls, whenever problems pertaining to the general welfare or the health of the people are being discussed and planned, there should stand organized medicine, ready and willing to counsel and to advise. Without such aid, programs of broad and intricate policy are likely to be ill-conceived and poorly thought through. This necessitates, on the part of the individual physician, a clearer concept of his own relationship to the body politic and a willingness to integrate himself more fully into community life.

At this particular crisis in medicine's history, the members of this organization, which for more than a half century has borne the health burdens for our people, should, by concert of action, point out the unwisdom and shortsightedness of any policy which seeks to throttle individual initiative or shatter the humanities of our profession.

The Legislature

Since the last annual meeting of this body, held one year ago in Mobile, the Legislature has twice been called into extraordinary session by the Governor; first, from August 16 through November 4, 1932; and again from January 31 through April 14 of the present year. Bills of importance to organized medicine were introduced. One of these sought to make provision for the validation of certificates of qualification to practice medicine in this State and not heretofore recorded by ex-

tending the time limit of such registration to six months from the passage of the act. This bill was prompted by a suit recently brought by a physician seeking to recover for professional services who had not recorded his certificate of qualification according to law. The court held that failure to so comply rendered the physician's claim invalid. It is to be regretted that this bill, because of the unusual congestion of the legislative calendar during the last days of the session, failed to become law. The Board, however, feels that there may be other physicians, who, through oversight or otherwise, have not recorded their certificates in the office of the probate judge of the county in which they reside and strongly urges that every licensed physician at once comply with this legal requirement.

Another bill setting up boards of control for hospitals within the State operated in whole or in part by county funds specifically excluded physicians from membership on such boards. This bill, seeking as it did to give no voice to physicians in the professional and ethical management of such hospitals, seemed particularly pernicious to the best interests of patient and physician alike, aroused vigorous opposition from the profession and met a deserved death in the committee.

A bill, through amendment of Section 9932 of the present Code, sought to remove certain restrictions now placed around the medical, legal and dental professions. This was manifestly a gesture to relieve chiropractors and the followers of other cults so that action might not be brought against them in the name of the State. This bill likewise failed to emerge from the committee.

Another bill, which also met defeat, was one which sought to exempt training schools for nurses in Jefferson County from the present provisions of the law vesting in county boards of health the right to pass upon the fitness of such training schools. This bill was but an outgrowth of an old controversy between one of the local hospitals in Jefferson County and the local Board of Health, which, on several occasions, has claimed the attention of this Board. At a hearing of this case before the Board last October, careful consideration was given all the evidence presented and this Board unanimously upheld the action which had been previously taken by the County Board of Health.

As pertains to the specific responsibility of this Association, as the State's legally constituted Board of Health, several bills of much importance were presented. In the present financial crisis, this Board and its executive officer have been in full accord and sympathy with the Governor, the Legislature, and the people in all policies of sane and sound retrenchment and have given support to measures looking to this end. The first extra session brought forth The Budget and Financial Control Act whereby in the future it will be impossible for the State to plunge in debt, as it had done in former years, in excess of its actual income; and it further provided that the amounts allotted, in the event of a deficit, shall be prorated. In a ruling made by the Attorney General's office, certain departments of State, amount-

ing to more than one half of the monies of the general fund, are not subject to proration, thereby making the burden for those departments which are so subject—among which is health—all the more heavy. At the first extra session, the appropriation for all health work, including the state subsidy to counties, was reduced 41.7 per cent. Immediately steps were taken through reductions in personnel and salaries to bring our department within this allotted amount. In the face of the fact that the present revenues seemed to be quite inadequate to meet all of the State's obligations, the Governor issued a call for the second extraordinary session of the Legislature.

Among the early bills introduced at this second extra session were two which sought to further reduce the appropriation to health by 57 per cent from its original amount and the second sought to practically abolish the special fund for Pasteur treatments by reducing this from \$30,000 to \$3,000. These bills passed the Senate but failed to emerge from the committee in the House to which they had been referred. Consequently, neither became law.

On the last day of the session, the Harrison substitute for the Lapsley-Lusk salary reduction bill, cutting drastically all salaries, passed both Houses, was approved by the Governor and thus became law. In the provisions of this bill, the salary of the State Health Officer was reduced more than that of any other State official—the reduction being more than fifty per cent.

Amid the financial chaos now all about and around us, while one might hardly expect the people, nor even its Legislature, to preserve an entirely sane perspective towards so technical a department as health, yet the doctors of this State have a right to expect a display of appreciation and willingness on the part of both the people and our Legislature to preserve as much as possible of a service, the basic worth and need of which is unquestioned and to which the medical profession's interest and efforts have so largely contributed.

The Health Department, during this crisis, has sought no preferential treatment at the hands of the Legislature—although a broad and statesman-like view of Alabama's plight might justify such a claim. It merely asked that the safeguarding of the people's health be kept on a parity with other important governmental activities such as the judiciary, education and others. Such a claim seems to the Board to be eminently fair and basically sound and it, therefore, urges the members of this Association to whom has been entrusted this charge to exert vigilance and zeal in the preservation of this living monument to their own unselfish labours.

Finances of the State Health Department

Every interested citizen must realize the desperate financial plight in which our State finds itself. The Board, feeling its responsibility both to this Association and to the people in the administration of the public health affairs of the State, has given careful consideration to the effect which such financial embarrassment must have on the

activities of this department. From all information available from the State Comptroller and the State Health Officer it appears that such funds as may become available for health work during the remainder of the present fiscal year will have to be based upon an opinion to be given by the Attorney General setting forth which activities of this department come within the scope of its police powers and, therefore, must be continued during this emergency. While it is impossible to foretell how many of the activities formerly conducted through this department will come within the purview of such ruling, the Board feels hopeful that a goodly portion of the most essential things may be preserved. In the face of the above facts the Board felt fully justified in adopting the following resolution:

"In view of the financial crisis now confronting the Health Department of this State, and wishing to encourage the State Health Officer in his efforts toward economy, and at the same time to comply with the laws of this State, this Board instructs the State Health Officer immediately to discontinue all activities not coming within the police powers of this department."

The Board recommends the endorsement by this Association of this action.

On motion duly seconded the Association approved the recommendation of the Board.

The President's Message

(See page 52)

The President, after a few gracious salutatory remarks, immediately launches into a consideration of those themes which seem to him of sufficient importance to claim consideration at the hands of this Association. With exceptional lucidity and force he directs attention to the basic things which have been incorporated into the Constitution of this Association and which differentiate it from other medical organizations. He points out the wisdom displayed in the framing of our Constitution and the reasons for the creation of some of its unique provisions, such as the College of Counsellors, and makes an earnest appeal to preserve and to give continued support to these features which have so largely contributed to the building up of the present efficient health system of the State. His appeal to the members of this Association to give their unstinted and loyal support to our Health Department in the face of the State's financial crisis is both opportune and timely and should meet with a hearty response from our entire membership.

The President next quotes a section from the Constitution which places upon Vice-Presidents the duty of stimulating languishing medical societies to more vigorous action and wisely suggests that during the ensuing year our Vice-Presidents concentrate their efforts on such societies within their district needing rehabilitation.

The Board is in entire accord with this suggestion.

COMMITTEE ON THE COSTS OF MEDICAL CARE

The President next, and somewhat at length, enters into consideration of the Reports of the Committee on the Costs of Medical Care recently submitted, and based upon a five years' study and accumulation of much factual data. This portion of his message reveals that he has given much time and thought to a problem now of consuming interest to the entire medical profession. He discusses certain important points developed and emphasized in both reports. While he endeavours to make no specific recommendation to the Association regarding these reports, he does urge with great earnestness the importance of preserving certain of the traditional and basic things prominently set forth in the Minority Report. In his opinion, one of the most urgent problems calling for immediate solution is that of devising satisfactory means of adjusting the burden of adequate medical care for the indigent classes, and invites the medical profession, and more particularly the county societies, to give serious concern to all plans which seek to find an answer for this economic phase of our problem. In concluding this portion of his message the President suggests the creation by this Association of a Standing Committee on Public Relations.

The Board is firmly of the opinion that the economic aspects of the relationship of our profession to the general public and to the manifold ramifications of our modern social structure constitute a problem of such great moment as to justify the profession in exhausting all legitimate means to find a sane and satisfactory solution. Any professional group whose services form so necessary a part of society as does that of medicine, must actively participate in the formulation of the machinery for that service, if success is to be ultimately and permanently attained.

The Board, therefore, concurs in this suggestion of the President and recommends that the section of the Board's report presently to be submitted and dealing with committees to be established in accordance with the ordinance of this Association providing for the creation of standing committees be approved by this Body.

On motion duly seconded the Association approved the recommendation of the Board.

STANDING COMMITTEE ON CANCER CONTROL

The President next directs attention to the increasing importance of the problem of cancer control in the United States and remarks upon the fact that this Association has no organized machinery or committee through which concerted attack may be made upon this disease and recommends the creation of a suitable standing committee on cancer control to be composed of five members. He also, in this connection, remarks upon the apathy and inactivity of most of our existing standing committees.

The Board not only concurs in the sentiments expressed in this section of the President's message but later on in this report makes certain concrete recommendations to this Association bearing

on all standing committees which should better care for the present needs of this body.

On motion duly seconded the Association confirmed this expression of the Board.

MEDICAL PRACTICE ACT

The President next directs attention to an important section of the law which requires registration by the physicians of his certificate of qualification and cites the case of a physician who failed to recover for professional services rendered because his certificate had not been so recorded.

The Board feels grateful to the President for calling the attention of members to this legal requirement and itself takes occasion in its report to make mention of its importance.

LIENS

The President next discusses the undue hardships and impositions which, in recent years, have fallen upon hospitals and the medical profession because of the enormous increase in automobile accidents along our public highways. He points out that in many instances the victims are, from a financial point of view, quite or totally irresponsible and in consequence become a complete charge upon the physician and hospital. He directs attention to a uniform bill suggested by the American Medical Association for general adoption which seeks to remedy some of these injustices but questions the practicability of the proposed bill on the grounds that it might tend to weaken the feeling of confidence and trust which should properly exist between physician and patient; and further, that physicians might be placed in the attitude of seeming to foster damage suits. The President also suggests certain particulars in which the proposed bill might be advantageously modified.

At the first extra session of this Legislature, a bill was introduced by Representative Kelly of Talladega which sought to afford relief to hospitals and physicians in this particular. This bill, before its introduction, was submitted to the State Health Officer for his consideration and had the sanction of the medical profession. However, for rather inconsequential reasons, this bill met defeat in the House. At the second extra session, Representative Williams of Calhoun County sought to provide protection to hospitals and physicians in this particular by amending Sections 4148-49-50 of the fraud sections of the Code, by making such sections applicable to hospitals as well as to hotels, inns etc., as these sections now provide.

The Board is in entire accord with the views expressed by the President as to the real need for legislation of this type and regrets that the legislation suggested by Representative Williams failed to become law.

CONCLUDING SECTIONS

In the closing sections the President discusses most interestingly the questions of medical specialties and of medical ethics. He points out that specialism in our profession is becoming of such magnitude and of such importance as to claim serious consideration both as to what should be given rec-

ognition by the profession as well as to how such recognition should be obtained.

The Board commends the careful reading and study of the entire message of the President to the members of the Association.

Reports of the Vice-Presidents

(See page 56)

The Board desires to commend the interest and enthusiasm displayed during the past year by all four of our Vice-Presidents. District meetings have been held at various points within their districts and seemingly much good accomplished. The Board desires to take this occasion to urge these officers, not only to exhaust their efforts in making their fixed district meetings attractive and interesting, but also to stimulate individual societies to hold more frequent meetings, at which time may be discussed both scientific and economic problems of immediate concern to their own communities.

The Board, therefore, recommends the approval of these reports.

As recommended by the Board, the Association placed its approval on the reports of the Vice-Presidents.

Report of the Secretary

(See page 58)

The Board finds that the books and records of the Secretary of the Association are complete, accurate and entitled to your approval.

The Association approved the sentiment expressed by the Board.

Report of the Treasurer

(See page 59)

The Auditing Committee from the Board, after careful examination and review of the books of the Treasurer of the Association, finds them in excellent order.

Since the publication of a monthly Journal was inaugurated some two years ago it appears that the duties of the Treasurer have been increased because of this fact. The present salary of the Treasurer of the Association is now \$300.00. Because of such extra duties, the Board feels that the sum of \$100.00 should be paid for these additional services, and it so recommends.

The recommendation of the Board, carrying with it an increase of \$100.00 per year in the salary of the Treasurer, was adopted.

Report of the Committee of Publication

(See page 61)

The Board finds that the report of the Committee of Publication reveals the fact that this committee has discharged its many important duties in

a commendable fashion and recommends that this Association give its approval of this report.

The report was approved by the Association as recommended by the Board.

Reports of Standing Committees

(See page 61)

Of the eight standing committees three have submitted reports through their chairmen. Of those submitting reports, the Board desires to commend the high type of work done by each of these committees and to particularly direct attention to the report of the Committee on Maternal Welfare, which embodies not only a careful analysis of the final report recently issued from the Children's Bureau on the study of maternal mortality in Alabama, but also carries two important recommendations, which the Board endorses. This report forcefully points out the urgent need for greater cooperation on the part of physicians both in the effort to elevate the standards and practices of midwives throughout the State, and, through greater care on their own part of accurate certification as to the cause of death, to materially improve maternal mortality statistics.

The Board urges a careful reading and study of these reports to all members of the Association.

This section of the Board's report was approved by the Association.

Creation of Standing Committees

As now constituted, the Association possesses eight (8) standing committees. These various committees came into existence gradually and over a period of a number of years in order to meet certain demands and needs presenting at the time of their creation. A study of these committees as they now stand reveals the fact that several of them have largely served their usefulness and might be abolished without serious harm; while others, in order to keep pace with modern progress, should be called into existence.

In keeping with certain suggestions made by the President, the Board recommends to the Association the abolition of all standing committees now existing and the creation of the following five committees to be established in accordance with the ordinance of the Association providing for such committees:

(a) Standing Committee on Legislation and Medical Economics: To be composed of twelve members; one from each of the nine Congressional Districts of the State, with the President, the Chairman of the State Board of Censors and the State Health Officer as ex-officio members.

(b) Standing Committee on Cancer Control: To be composed of five members.

(c) Standing Committee on Maternal and Infant Welfare: To be composed of five members.

(d) Standing Committee on Mental Hygiene: To be composed of five members.

(e) Standing Committee on the Prevention of Blindness and Deafness: To be composed of five members.

The Board recommends the adoption by the Association of this section of the report.

On motion duly seconded the recommendation of the Board was adopted by the Association.

Stewart Resolution

(See page 35, July 1932 Journal)

At the last meeting of the Association, held in Mobile, Dr. J. P. Stewart introduced a resolution which sought to amend the Constitution of the Association. Inasmuch as all amendments to the Constitution have to lie over for one year before being acted upon, and as Dr. Stewart sent in a written request to the Board to postpone consideration of this matter, the Board granted this request, and recommends to the Association the postponement of action on the proposed amendment.

Dr. W. W. Harper moved that the recommendation of the Board to postpone be concurred in.

Dr. C. A. Mohr called for a reading of the resolution as introduced by Dr. Stewart.

The resolution was read, whereupon Dr. Mohr moved that the recommendation of the Board be not concurred in. The motion received a second.

On call for the question, Dr. Mohr's motion to non-concur in the Board's recommendation to postpone was adopted.

Dr. Mohr then moved (the motion had previously been offered by Dr. J. U. Ray) that the Stewart resolution be not adopted.

On vote the Stewart resolution providing for an increase in membership in the College of Counselors was not adopted.

Resolution of Dr. R. S. Hill

(See page 65)

Since this resolution seeks to amend the Constitution, it must lie over for one year before action may be taken by the Association. The Board so recommends.

The recommendation of the Board was adopted.

Resolution of Dr. M. Y. Dabney

(See page 64)

Realizing the necessity for maintaining the high standard which our Journal has enjoyed, the Board recommends the approval of this resolution by the Association.

The recommendation of the Board was adopted.

Resolution of Dr. E. M. Mason

(See page 67)

The Board heartily concurs in the sentiments expressed in this resolution and recommends its adoption by the Association.

The Association adopted the resolution as recommended by the Board.

Resolution of Dr. Seale Harris

(See page 63)

The Board is in hearty accord with the sentiments expressed in this resolution, and, therefore, recommends its adoption, as well as the suggested addition to Section 2 of the present ordinance.

On motion duly seconded the Association adopted the recommendation of the Board.

Resolution of Dr. M. T. Davidson

(See page 65)

Inasmuch as it is the feeling of this Board that the views expressed in the chief Minority Report of the Committee on the Costs of Medical Care more nearly embody the traditions and sentiments of organized medicine, not only in Alabama but throughout the country, the Board recommends the approval of this resolution by the Association.

Dr. W. W. Harper moved the adoption of the Board's recommendation.

Dr. C. A. Mohr moved that the Board's recommendation be not concurred in, which received a second.

Dr. M. T. Davidson discussed the question and urged adoption of the Board's recommendation.

Dr. F. L. Chenault offered as a substitute motion that the recommendation of the Board be referred to the Association's Committee on Legislation and Medical Economics, when appointed; that the Committee, after formulating a plan, submit its findings to the State Board of Censors for consideration. The motion was seconded.

Dr. C. A. Mohr withdrew his motion.

On call for the question, the motion made by Dr. Chenault carried.

Resolution of Dr. J. B. Moxley

(See page 67)

The Board appreciates the fine thought and sentiment embraced in this resolution. Inasmuch as the Secretary of the Association already keeps a record of all members of the Association dying each year, also through the columns of our monthly Journal transmits this information to the members of this Association, the Board feels that such a committee, as suggested in the body of this resolution, is hardly justified at this time. The Board,

therefore does not recommend the adoption of this resolution.

The recommendation of the Board that the resolution be not adopted was concurred in by the Association.

Duration of Annual Meeting

The present ordinance regulating the duration of time for our annual meeting fixes it at four days.

Because of an ever increasing multiplicity of medical and scientific organizations, and because of the importance of a physician's time, the Board feels that at least for the present, and during the present economic conditions, the time of our annual meetings might be shortened from four to three days.

The Board, therefore, recommends to the Association that the present ordinance be so changed as to conform to this recommendation.

The recommendation of the Board, fixing the duration of the annual meeting at three days, was adopted.

Resolution of Dr. J. S. McLester

WHEREAS, The American public is becoming increasingly health conscious and seems inclined, without discrimination, to follow much of the advertising concerning foods, some of it ill advised, seen in the public press; therefore be it

Resolved, That it is the sense of this organization that simple foods such as were eaten by our fathers are, as a rule, best; and that the prevailing tendency towards fadism in diet is to be deplored.

Dr. C. A. Mohr moved immediate adoption of the resolution. The motion received a second and *was adopted*.

The presentation of Part I of the Board's report having been completed, it was adopted as a whole by the Association.

The Chairman next submitted Part II of the Board's report which deals with its activities as a Board of Medical Examiners.

Upon motion and according to the usual custom this part of the report was accepted by the Association without being read and appears below:

Part II

REPORT OF THE BOARD OF CENSORS AS A BOARD OF MEDICAL EXAMINERS

EXAMINATIONS HELD JULY 1932 AND JANUARY 1933

Total number examined.....	12
Total number of certificates granted.....	12
Total number of pro forma certificates.....	
granted	18
(a) By reciprocity with other states.....	19

EXAMINATION HELD JULY 12 TO JULY 15, 1932

Number of applicants examined.....	10
Number granted certificates.....	10

EXAMINATION HELD JANUARY 10 TO JANUARY
13, 1933

Number of applicants examined.....	2
Number granted certificates.....	2

SUCCESSFUL APPLICANTS IN JULY 1932

Ferry, James Adolph	Owings, William Jen-
Flinn, Clifton Boykin	nings Bryan
Lee, Aubrey Bernard	Shirey, Arnold Grady
McClendon, James	Speir, Henry Philip
Brown	Thompson, John An-
McCreary, Pegram Laz-	drew
enby	Wilson, Arnold

SUCCESSFUL APPLICANTS IN JANUARY 1933

Fargason, James Forrest
Holmes, Michael

RECIPROCITY APPLICANTS RECEIVED APRIL 1932-
APRIL 1933

Belcher, Cecil Cullen—La.....	Sept. 15, '32
Berry, Robert Alford—S. C.....	Dec. 10, '32
Brown, Reuben Alec—Pa.....	Jan. 4, '33
Camera, Antonio Valentino—Ill.....	Apr. 28, '32
Cole, Leslie Gay—Tenn.....	Nov. 7, '32
Donald, Joseph Marion—Minn.....	Sept. 1, '32
Foster, John Howard—Ga.....	Apr. 17, '33
Graham, Joseph Brown—Va.....	July 12, '32
Guest, Reuben John—Ga.....	June 29, '32
Martin, John Russell—Tenn.....	Dec. 16, '32
Michie, Henry Clay—Va.....	Oct. 20, '32
Minderhout, Will John—Ill.....	Jan. 9, '33
Montgomery, Jimmie Ethel—Minn.....	June 20, '32
Peake, John Day—Va.....	Nov. 3, '32
Plump, Ad Wimbs—Tenn.....	May 19, '32
Reneke, Edward Joseph—Tenn.....	Sept. 27, '32
Roberts, Mack Jerome—La.....	Sept. 10, '32
Springer, Homer Clarence—Okla.....	Oct. 11, '32
Van Sant, Thomas Elzie—Tenn.....	Sept. 1, '32

Part III

REPORT OF THE BOARD OF CENSORS AS A
COMMITTEE OF PUBLIC HEALTH

The Chairman: The next section of the Board's report to the Association deals with its activities as a Committee of Public Health. Following the precedent of the past few years, this part of the report will be presented by the State Health Officer, Dr. Baker.

Dr. Baker: I do not now propose to burden you with the reading of the State Health Officer's report; this will be published in full in the official Journal of this Association where you may read and study it at leisure. I merely wish to leave with you one or two thoughts which have a direct

and intimate bearing on the future of your health organisation.

In the words of Thomas Paine: "Truly these are troublous times that try men's souls".

First, it seems almost superfluous for me to say to this group of active, practising physicians that I, as the executive officer of your Health Department, appreciate to the fullest the vicissitudes and trials through which organised medicine is now passing; practically all of my service stripes have been won in fields which now engage your attention and no problem is likely to confront you with which I am not quite familiar. Ever since the birth of Alabama's health organisation, its director has been chosen by you and from your ranks. This is a part of the contract with our people, and to this fact is to be attributed much of our success in health affairs. This close interlinking of public health and medicine has proven a tremendously stabilising and harmonising force, working for the good of both. Largely through your zeal, your interest and your labours has public health in Alabama attained its present enviable place and enjoying, as it does, the confidence of all the people. As our State grew apace, the Legislature, sharing with us the pride of accomplishment, liberally provided, through a gradually increasing appropriation, sufficient funds for a fairly complete and well rounded health program for the entire State. Had disaster not overtaken the world and us, we would to-day witness the fruition of the dreams of Cochran, Sanders and Welch—a far-reaching health service, stretching deep into every village and hamlet within the confines of Alabama. But, while the fates, temporarily, have decreed otherwise, you and we must not lose heart. The blight of finances may, for a time, halt our onward progress; but it cannot be permitted to stifle our enthusiasm and ardour. In the beginning, there were no finances; yet we builded none the less. To-day, and until the clouds lift, we must steadfastly hold on, looking forward hopefully to a better day. To you no doubt, who have a feeling of parental pride in Alabama's Health Department, some of the recent legislative happenings seemed cruelly harsh and unappreciative; in truth, our department does differ from other depart-

ments of State in that no other important governmental activity has been entrusted to a particular group, as has been the case with health. Yet, in these circumstances, it was scarcely to be expected that the highly technical nature of our work, nor even its intrinsic worth, could be fully grasped by the lay mind, in the face of the insistent urge of universal and drastic retrenchment. The clamor "to cut" took precedence over all others, with little thought of the ultimate consequence to our people. And yet, with few exceptions, the spirit manifested was not that of deliberately injuring so valuable a service, but rather a failure to properly appreciate and evaluate the benefits flowing from an efficient and well organized health service. It is my belief that these things can be quickly rectified through the united and persistent efforts on the part of all of the membership of this Association to carry to our legislators and the people the real value of a service to which you have so largely contributed. If, on your part, this is done—and I feel that it will be done—we need have no fear. Because of you, our Health Department came to be the big thing that, up to now, it was; by the same token it can be rescued and restored to a thing of even greater usefulness.

THE REPORT OF THE STATE HEALTH OFFICER

COUNTY ORGANISATION

Despite unparalleled financial circumstances, the barometer of counties organised for full-time health service stands at fifty-two. This has been attained, first, by a spirit of sacrifice on the part of employees; and, second, through aid procured from the Federal Government. Without these factors operative a majority of the county health departments would have, of necessity, ceased operations on March 1. No other course would have presented itself in the face of retrenchments on the part of county governments and other local agencies ranging from 20 to 50 per cent.

Perhaps the most disconcerting aspect of the situation is the loss of sanitation officers to a number of the counties. This important staff member is the first to feel the brunt when funds are limited, there being no disagreement that the health officer and the nurse are more essential in times of economic stress. It is confidently believed, however, that a return to normalcy will bring back the several sanitation officers temporarily dispensed with and that a well-rounded program will be re-instituted. In the meanwhile health officers and nurses are applying themselves earnestly to the manifold problems presented.

SPECIAL RESEARCH STUDIES IN PUBLIC HEALTH

It is gratifying to record that, inspite of adverse times, not only the special studies in certain fields of public health work which had previously been inaugurated in Alabama and financed by outside agencies have been steadily pushed forward, but that an intensive study in the control and eradication of typhus fever is now being conducted in southeast Alabama, with headquarters in Dothan, by the Public Health Service and the Rockefeller Foundation in cooperation with the State Board of Health.

This study was prompted by the fact that a critical analysis of the typhus fever incidence in Alabama revealed a marked upswing during the past year and that cases were confined largely to certain counties in the southeastern part of the State. After a careful survey of the entire situation, this department succeeded in enlisting the interest and financial support of both the Public Health Service and the Rockefeller Foundation in inaugurating a program of control and study which will extend over a period of some eighteen months and out of which should come much valuable information both to our own and other states where endemic typhus constitutes a real public health problem.

Research activities such as this one, as well as those in rural tuberculosis and soil pollution now going on in this State, carry with them values of an educative and promotional kind in all public health work of far-reaching importance, and are encouraged at every opportunity by our department. Not only do they bespeak efficiency in our scheme of health organisation but they greatly benefit the people, the physicians and the health workers.

THE MIDWIFE PROBLEM

In 1931 there were 3568 midwives under the supervision of county health departments. During 1932 this number was reduced to 2684, a reduction of nearly 1000. This result was accomplished by withholding permits from midwives whose records show a preponderance of untoward results such as stillbirths, neonatal deaths, and maternal deaths. In spite of this diminution in the number of midwives, the activities of these unskilled birth attendants increased from 15,325 to 17,913, approximately 2,500. This undoubtedly reflects increased financial difficulties in families as well as more effective oversight of the activities of midwives.

The trained medical profession is prone to look upon the midwife with some degree of distrust, if not of disdain. It rightfully should look upon her as one of its responsibilities. The various health departments, while not sponsoring the midwives, do try to make the best of a difficult and not readily changeable situation. Individual records are kept in organised counties on each midwife, as to the number of deliveries reported, cleanliness of person and freedom from communicable diseases. Many times a physician is called upon to finish a bad job she has attempted, and thus learns first-hand information about her technique, or rather lack of it. In such cases, the

reporting by the physician to the County Health Officer of any laxity on the part of a midwife will aid in determining whether this particular midwife should be allowed to continue to practice.

BUREAU OF LABORATORIES

In the sudden death of its Director, Dr. L. C. Havens, on March 19, 1933, this bureau sustained a severe loss. Under his guiding hand Alabama's Health Department had built up a central plant and eight branch laboratories which had not a peer in the South and which was an outstanding credit to any state. Because of the enforced retrenchments made necessary by the State's financial embarrassment, the sundry activities formerly engaged in through the laboratories had to be materially curtailed; but the quality of work and personnel retained in each will continue to be of a high and dependable type. Just how much of this service may finally be preserved cannot now be predicted in the face of present uncertain conditions.

(a) Vaccine Division:

During the calendar year 1932, the Central Laboratory manufactured vaccines to supply the entire State as follows:

Typhoid vaccine	1,082,382 cc.
	(432,000 persons)
Diphtheria toxoid	326,720 cc.
	(108,999 persons)
Rabies vaccine	121,324 cc.
	(4,333 treatments)
Tuberculin	360 cc.
Silver nitrate ampules	47,500
Sterile distilled water, salt solution, etc.....	285,510 cc.

It may be interesting to note that the commercial cost of the products listed above would have been \$102,600.00. The actual cost of production by the vaccine division was \$8,500.00

During the year the vaccine division continued the study of diphtheria toxoid precipitated with alum. The technic of production was perfected and its immunising action in guinea pigs was determined. In cooperation with the Lee County Health Department and the Bureau of Preventable Diseases, the immunisation of children with a single injection was undertaken. Of 797 children who received one injection of 1 cc., 96% were Schick negative some two months later. The National Institute of Health has confirmed these results and the studies have been accepted for publication.

Experiments on the growth of vaccine virus in tissue culture were begun with a view to the production of vaccine by this method for human immunization against smallpox.

(b) Diagnostic Division:

The work of the diagnostic division showed a decrease in the total number of specimens from 292,673 in 1931 to 258,461 in 1932. The chief decrease was in routine urinalysis which were abolished in October by resolution of the Board. This effected a reduction in the number of specimens of urine from 34,765 in 1931 to 18,400 in 1932, a

drop of 16,365. The low incidence of diphtheria in the State during the year resulted in some 5,000 fewer throat cultures. Specimens of blood for syphilis decreased from 87,955 to 81,065, probably a reflection of the smaller number of patients seen in private practice, as well as the direct result of the closing of the free clinics in November. Blood smears for malaria numbered 11,948 as compared with 16,055 in 1931, a decrease parallel with the decline in the death rate from this disease.

The following bacterial antigens for use in diagnostic agglutination tests were prepared:

<i>B. typhosus</i>	3,860 cc.
<i>S. paratyphosus</i>	1,390 cc.
<i>S. schottmulleri</i>	5,160 cc.
<i>S. morgani</i>	2,160 cc.
<i>B. abortus</i>	4,800 cc.
<i>B. tularensis</i>	1,700 cc.
<i>B. proteus</i> X ₁₀	1,620 cc.

The following diagnostic agglutinating serums were prepared:

<i>S. aertrycke</i>	20 cc.
<i>S. morgani</i>	130 cc.
<i>S. enteritidis</i>	25 cc.

(c) Research and Investigation:

In addition to the above routine work, research and investigative work have been conducted in several interesting scientific fields, among them being:

- (1) Antigenic properties of rabies virus.
- (2) Lithium media for isolation of *B. typhosus* from feces.
- (3) Media for isolation of *B. typhosus* from water.
- (4) Soil pollution studies.

These studies are covered in the 1932 publications given below:

Flocculation Tests for the Differential Diagnosis of Smallpox and Chickenpox. Leon C. Havens and Catherine R. Mayfield. *J. Infect. Dis.* 50: 242 (March).

The Antigenic Properties of Rabies Virus. I. Leon C. Havens and Catherine R. Mayfield. *J. Infect. Dis.* 50: 367 (April).

The Antigenic Properties of Rabies Virus. II. Multiplicity of Strains as Shown by Agglutinin Absorption and Neutralization. Leon C. Havens and Catherine R. Mayfield. *J. Infect. Dis.* 51: 511 (November-December).

A Correlated Fermentative and Antigenic Variation in Certain Strains of Morgan's Bacillus. Leon C. Havens and Anne George Irwin. *J. Infect. Dis.* 50: 550 (May-June).

The Isolation and Identification of Pathogenic Bacteria in Feces. Leon C. Havens. *J. Lab. and Clin. Med.* 17: 628 (April).

Diphtheria Toxoid Precipitated with Alum. Dewey M. Wells, Arthur H. Graham, and Leon C. Havens. *Am. J. Pub. Health*, 22: 648 (June).

BUREAU OF PREVENTABLE DISEASES

During the past year the health record of the State in regard to communicable diseases has been

outstandingly favorable. A new low death rate of but 133 for typhoid fever was reached during 1932 and it is to be sincerely hoped that this disease will never again become the scourge it once was. Diphtheria, measles, scarlet fever and malaria all were less prevalent than in the preceding year. Influenza reached epidemic proportions late in the year and was responsible for an unfavorable death rate in December. Smallpox appeared in two of the unorganised counties and a total of 5,000 vaccinations were done in combating it. Diphtheria also became epidemic in four unorganised counties and led to immunisation campaigns. More than 6,000 children were given toxoid in these counties. The fact that none of these communicable diseases gained any considerable headway would seem to furnish a striking argument in support of organised health work.

In connection with diphtheria immunisation, attention is called to the new alum-precipitated toxoid developed and now being furnished by the State laboratories. From present indication it appears that one injection of this product will produce immunity in a very high percentage of those susceptible. The advantage of such a procedure needs no further comment, except to urge that all physicians put forth effort to see that every infant become immunised before the end of the second year.

(a) Activities of Chest Clinics:

1932 was the second year of operation of our chest clinics and their place in any sustained campaign against tuberculosis would appear to be firmly established. For the lack of trained personnel for three months of the year, only one clinic was in operation, so the volume of work was not as great as in the preceding year. The cases coming in for examination, however, were well selected and the clinics were enabled to help establish a diagnosis in many difficult cases. The cooperation of the medical profession continued to be very gratifying. The services of these clinics are now also being extended to the doctors and the people of the unorganised counties in so far as possible, consistent with the limited funds and personnel available.

Number of clinics.....	74	
Counties visited	38	
Examinations made	3,093	
Negatives	1,729	55.90%
Suspects	592	19.14%
Positives	738	23.86%
Deferred	34	1.1%

Of the 738 cases diagnosed as tuberculosis

243 were classed as minimal
207 were classed as moderately advanced
140 were classed as far advanced
137 were classed as childhood type
12 were not classified
515 were not previously diagnosed.

Working in cooperation with the Rockefeller Foundation early in the year a research unit was established in Lee County for the study of tuberculosis in this State. Out of this study it is hoped

that there will come a more intimate knowledge of the problem as regards the mode of transmission and its practical contact. The Foundation is carrying the entire financial burden of this study.

(b) Venereal Disease Clinics:

For the first part of 1932 the Department continued its plan of operation of both free and co-operative clinics. The Board, at its April meeting, adopted certain regulations governing the appointment of free clinicians and required that they treat only patients referred by practicing physicians. The marked reduction in appropriations made it necessary, in October 1932 to discontinue the payment out of State funds of all salaries to clinicians. As a result the clinics operated at Decatur, Dothan, Eufaula, Talladega, Tuscaloosa, and Tusculumbia ceased to function. In the other cities some local arrangements for carrying on were devised by the County Boards of Health.

By means of economy in the purchase and manufacture of drugs a limited service through the State has been continued up to the present. From now on funds will not likely be available for further participation by the State in this program. More than 200 physicians continued to cooperate in the treatment of indigents in their communities. The clinics reported the following work for the year:

Free clinics operating in December, 1932.....	9
Cooperative clinics operating in December 1932	204
New cases of syphilis.....	11,285
New cases of gonorrhea.....	3,221
New cases of chancroid.....	144
Doses of arsephenamine (606) administered.....	89,442
Doses of bismuth or mercury administered.....	84,736
Other treatments given.....	45,409
Wassermanns made (Clinicians and other physicians)	81,552
Microscopic examinations	6,883
Discharged as non-infectious and probably cured	7,398
Total visits to clinics.....	201,343

(d) Oral Hygiene:

The educational program in oral hygiene sponsored by the Department has shown gratifying progress. Thirty-eight counties have made definite plans to promote this work. This division suffered heavily from the retrenchment program and has been reduced to but one person. The two hygienists previously employed did excellent work and demonstrated the value of this type of service. During the year a dental health educational film was produced and is being shown in the elementary schools. All the state teacher colleges were visited during the summer months and a demonstration clinic held for prospective teachers. This is an ideal method of disseminating the fundamentals of health knowledge throughout the State.

(e) Epidemiology:

In 1932 all phases of communicable disease control showed substantial increases. Each organised county was encouraged to have immunised at least as many preschool children against diphtheria as

the number of babies born during that year. This definite goal no doubt acted as a stimulus and accounts for increases.

With definitely planned programs, some counties took hookworm control as a special project and went about it in a systematic way. Thus, 1,500 more treatments were given than in the preceding year.

The number of tuberculosis visits by the public health nurse decreased by 1,000. The new system of records and the fact that many contacts of dead cases were eliminated from visit lists by tuberculin tests no doubt accounts for some of this decrease. Unless this reduction in cases to be followed up over-balanced the new cases discovered through the chest clinics, there seems to be no reasonable explanation for the decrease in number of visits. However, with the increased interest in tuberculosis manifested by the medical profession and the health units, it would appear that the reason suggested is the logical one.

Immunisations against typhoid fever doubled in 1932 over those given in 1931; while cases of typhoid fever in the organised counties decreased in 1932 to 701 from 868 cases in 1931.

The number of cases of smallpox reported in organised counties in 1932 and 1931 was almost identical. Free vaccine was furnished to the counties in both years, so this could not explain the fact that vaccinations in 1932 more than doubled those in 1931. However, the number of cases in unorganised counties increased in these two years from 4 to 178, which no doubt had a bearing on the number of vaccinations given. Besides this obvious stimulus, many counties had definitely planned smallpox vaccination as part of the yearly program.

BUREAU OF SANITATION

It must ever be borne in mind that in the control and reduction of most communicable diseases, methods other than strictly medical must be used through the control of environment, food and drink. These factors have a direct bearing upon the incidence of typhoid fever, the dysenteries, hookworm, malaria, diphtheria, scarlet fever, as well as many other diseases.

The attack must be frequently made through a number of avenues, which may touch the rights of the citizens, finance and commerce. In any consideration of the broader aspects of control measures that pertain to environment, trained engineers, sanitarians and those specialised in milk control are quite essential. Carrying these activities into the field has been one of the most difficult tasks of the organisation. The non-technical sanitation officer, where one was employed, has been able to grasp and execute only a part of the work of environmental sanitation. Whatever part he could do has been delegated to him, and the guidance needed has been supplied through a properly trained central force.

In those counties with only a three-piece personnel and without a sanitation officer, every effort has been made to carry on as many basic functions as possible, while in the State as a whole much of

such work has been done in the unorganised counties as well.

Heretofore this work has been carried on through the operation of two bureaus. With the end in view both of economy and increased efficiency, the previously existing Bureaus of Engineering and Inspection were, on January 1, 1933, fused into the one Bureau of Sanitation. Here also, as in other bureaus, the knife of retrenchment has been deeply applied, with the inevitable result of serious curtailment of certain activities formerly conducted through the combined bureaus.

Reduction in county budgets has reduced the county sanitation officers from 30 to 11, exclusive of the staff in Jefferson County. This has made necessary the assumption of such basic functions as could be borne by the Bureau of Sanitation, and the elimination of others. With the reduction in bureau personnel, other activities on a state-wide basis have been and must further be abandoned, and others greatly reduced. Only the main avenues of transmission of disease through environment can be watched to such an extent as personnel is available. With barriers largely swept away, it is not difficult to predict the ultimate end result.

Reduction in Personnel:

A total of six engineers, six inspectors and a part-time draftsman were released between July 1, 1932 and April 1, 1933.

Seven engineers with one part-time draftsman remained to do the engineering work. This number includes the Director of the Bureau of Sanitation.

Public and Semi-Public Water Supplies:

The number of public water supplies under supervision in 1932 was 208 as compared with 115 in 1922, an increase of 81%. The towns served in 1922 were 125 compared with 243 in 1932, an increase of 95%. The number of people served in 1922 was 530,000 while in 1932 the number was 985,000, an increase of 86%. The increase in population during this time was roughly 13%. The number of visits to plants in 1922 was 106 while in 1932 this figure was 227, an increase of 114%. A much closer check was kept on supplies treating surface waters.

Water used for the manufacture of ice and the process was checked at 71 plants. Thirty-two (32) inspections of semi-public supplies, such as those for hotels, recreation camps, prisons, etc., were made.

Thirty-seven (37) points where vessels and trains obtained drinking water were certified to the United States Public Health Service for use by public carriers.

Permits were issued for improvements to 28 plants, with improvements made on 42 plants. Complete plans for 4 plants were checked and approved.

Malaria Control:

Until October 1, when it was found necessary to dispense with the services of the men engaged in 8 counties, work was carried on by means of drainage, oiling, screening or mosquito proofing homes, control of impounded waters, educational work and

through lectures and moving picture shows. Twenty-four (24) other counties reported work on malaria control. These were given aid upon request by engineers from the central office.

During the year 46 inspections of impounded water projects were made. County health units reported 86 such inspections. There are 83 projects impounded for which permits have been issued with 106 under supervision. This is equivalent to stating that precautions against these becoming new foci have been taken. Previous to such steps, many expensive epidemics were caused by such impoundages.

Fifty (50) instrumental surveys have been made for drainage projects in 10 counties employing labor through the Reconstruction Finance Corporation funds.

Sanitation and Visual Education:

Sanitation work was done in 255 communities located in 40 counties in 1932. This work was continued in general as in 1931 with an increase in rehabilitation. Twenty-three thousand and five hundred (23,500) people were directly served by 5,763 installations or improvements.

The visual education program consisted of 563 shows on subjects of hookworm disease, diphtheria, sanitation, malaria, and health unit functions and touched a population of 62,417 persons.

DIVISION OF INSPECTION

Deputisation of County Inspectors: Beginning late in 1931, county sanitation officers and municipal meat and dairy inspectors, whose records qualified them, were deputised to make official inspections of bottling-plants, hotels, dairies, and milk-plants, and to grade and score these establishments. The inspectors, counties, and dates of such deputization are listed below:

Inspector and County:	Date Deputised:
W. C. Koonce—Lauderdale.....	10-23-31
W. C. Evers—Limestone.....	10-26-31
Leslie Cummins—Madison.....	10-26-31
L. E. Beckham, D. V. M.—Tuscaloosa.....	11-21-31
M. K. Heath, D. V. M.—Morgan.....	11-21-31
L. W. Grogan—Talladega.....	1-12-32
W. P. Claughton, D. V. M.—Etowah.....	4-12-32
J. C. Poole—Lee.....	5-15-32

E. M. Yohn, of Baldwin County, was deputised for hotel and bottling-plant inspection, but not for dairy inspection.

Routine Sanitary Inspections: During the calendar year of 1932, 21,411 inspections were made by the central office field staff, of hotels, eating places, soda fountains, bakeries, bottling plants, ice cream plants, fair concessions, meat markets, abattoirs, oyster shuckeries, candy factories, barber shops, roadside stands, tourist camps, etc. This compares with 15,259 in 1931. The deputised inspectors reported 7,129 inspections of similar types of establishments in their counties. These represent very few duplications.

Extension of Milk Control Activities: The standardised milk control program of the State Board of Health was extended during the year to include Tallassee in Elmore County, Haleyville in

Winston County, Montevallo in Shelby County, and Roanoke in Randolph County. The work was being carried on in Haleyville, even though the county health department was disbanded, until all field forces were called in about March 15.

Milk Control Activities: Members of the central staff made 3,744 dairy farm and 194 pasteurising plant inspections for the 59 communities in which milk control activities were under way. In addition, 1,088 dairy farm inspections in the Black Belt were made for the City of Birmingham. (This activity had to be discontinued on February 28.) Three hundred twenty-two inspections were made of butter-making plants, milk condensaries, cooling stations, and sour cream collecting stations. Until October 31, 589 dairy farm inspections and 9,939 methylene blue tests were made for Southern Dairies, Inc., under a special appropriation withdrawn on that date.

Effect Upon Milk Quality: Technically, from the viewpoint of physical equipment at dairy farms and milk-plants, the effect of greatly reduced milk prices is reflected in milk quality or grade. In other words, a somewhat lenient policy has had to be adopted with respect to the factors of dairy building construction and major repairs upon milk grades. Otherwise, that is, with respect to bacterial quality, the milk supplies have as a whole been maintained at a high level of quality and safety, except in one or two communities, in which circumstances beyond the control of the health officer affected the situation.

BUREAU OF VITAL STATISTICS

The Bureau of Vital Statistics was created in 1908. It will be recalled that the efficiency of the bureau was not developed to a sufficient degree to have Alabama included in the United States Registration Area for Deaths until 1925. Satisfactory birth registration was not secured until 1927. Because of the critical financial situation at the present time, it may be well to review briefly the stages that are necessary in order to maintain an efficient Bureau of Vital Statistics.

The work of the bureau is divided into three divisions, namely: (a) *Registration*, (b) *Record*, and (c) *Statistical*.

(a) The duties of the registration division consist of the supervision of the registration of births and deaths throughout the State. Each of the 1,065 reports received from the local registrars each month must be checked and recorded, as well as supplementary reports from coffin dealers, undertakers and hospitals; births and deaths found unreported must be followed up; the reporting of doctors and midwives checked. In order to have accurate reports and statistics, it is necessary that each certificate be reviewed for errors, omissions and inconsistencies. During the last calendar year, the medical portion of 3,422 death certificates were queried to physicians because of incomplete or indefinite statements of the cause of death. Answers were received from 2,326 of these, which made possible many changes resulting in more accurate and exact classification of causes of death. Three thousand one hundred and sixteen other queries concern-

ing the personal facts on the certificate were received and information added to the certificates.

(b) The record division indexes and files the certificates received each month. This division has a heavy correspondence relating to both current certificates and records for previous years. The following table for the calendar year, 1932, furnishes a concise idea of the extent to which the public uses these records:

Certified copies issued.....	3,747
Birth records for employment purposes.....	947
Copies of birth records, mainly for school purposes, etc., and other miscellaneous searches	7,029
Birth registration notices sent to parents.....	55,719
Corrections to records.....	4,880

These figures reveal the importance of vital statistics records for legal and social purposes and emphasize the responsibility which rests with the State Department of Health to see that the series of these records are continued.

(c) The statistical division prepares and analyzes all material for tabulation. It is difficult to over estimate the importance of the statistical functions of the Bureau of Vital Statistics. It is only by careful analysis and study of the distribution of disease, as respects different areas, different population groups, as race, age, sex, etc., that the health executive can plan programs of health conservation intelligently. As examples of such study, special mention may be made of the situation as regards typhus which lead to the establishment by the United States Public Health Service of a special research unit in Houston County for the study of its epidemiology and practical measures for control.

As soon as one begins to emphasize the importance of the statistical functions of the bureau, one is faced with the necessity of exact information. This means, therefore, that the work which is allotted to the registration division must be efficiently carried out. As an example, the importance that every birth and death certificate give accurately, not only the exact place of birth or death, but in case the certificate was for a person not a resident of the community in which the birth or death occurred, the certificate should indicate accurately the usual place of residence. During the past five years it has been possible for us to work out procedures by which we have been enabled to take into consideration, not alone this factor, but many others which are important in any critical analysis of vital statistics data.

The question sometimes arises if there may not be duplication in the case of statistical work done by the Federal Bureau of the Census and the State Bureau of Vital Statistics. This should be answered in the negative. Because of the size of the problem which faces the Federal Bureau of Vital Statistics it is not in position to make tabulations of studies for areas smaller than a state and in sufficient detail to be of any decided help in a more critical analysis of the individual state's local problems. It therefore rests with the State Bureau of Vital Statistics to make the analyses for the subdivisions of the State.

During the past year, the statistical division has issued monthly reports of current vital statistics; made several special studies of the distribution of diseases and deaths in different areas of the State, especially typhoid fever, diphtheria, malaria, pellagra, tuberculosis, and deaths from accidental causes; issued an annual summary of the vital statistics by counties and cities for 1931 and at the present writing, the work of the annual summary for 1932 is at a most encouraging stage. It is hoped that by the first of June this summary may be issued.

On motion duly seconded the Association ratified as a whole its action on Parts I, II, and III of the Report of the Board.

REVISION OF THE ROLLS

The next order of business being the revision of the rolls of the Association, the Secretary was directed by President Kirkpatrick to proceed without interruption in the absence of objection. As a preface to the revision of the Roll of County Societies, the Secretary said:

"County Medical Societies, to comply with the Constitution, must meet certain obligations. First, an annual report, on forms furnished by the Association, must be filed with the Secretary; second, each society is expected to be represented at the annual meeting by at least one delegate; third, fees must be paid to the Treasurer of the Association for each delegate to which the Society is entitled; and fourth, dues are to be remitted to the Treasurer for each member".

With this foreword, the revision proceeded.

1. Revision of the Roll of County Societies:

(a) County societies which have fulfilled all their constitutional obligations: Autauga, Baldwin Barbour, Bibb, Blount, Bullock, Butler, Calhoun, Chambers, Cherokee, Chilton, Choctaw, Coffee, Colbert, Conecuh, Covington, Crenshaw, Cullman, Dale, Dallas, DeKalb, Elmore, Escambia, Etowah, Geneva, Hale, Henry, Houston, Jackson, Jefferson, Lamar, Lauderdale, Lee, Lowndes, Macon, Madison, Marengo, Marion, Marshall, Mobile, Monroe, Montgomery, Morgan, Perry, Pickens, Pike, Russell, St. Clair, Sumter, Talladega, Tallapoosa, Tuscaloosa, Walker, Washington, Wilcox, Winston—Total 56.

No objection being made as to the correctness of this report, the President directed that these counties be passed as clear of the books.

(b) County societies partially delinquent: Clarke, delegate dues for one; Clay, representation and delegate dues; Cleburne, delegate dues for one; Coosa,

delegate dues for one; Fayette, representation; Franklin, representation; Greene, representation, county society and delegate dues; Lawrence, representation; Limestone, delegate dues; Randolph, representation; Shelby, representation—Total 11.

No objection being offered as to the correctness of this report, the President directed that these counties be passed, with an understanding that the Secretary and Treasurer make an effort to remove the delinquencies.

(c) County societies totally delinquent: None.

Thereupon the Secretary said, "In revising the Roll of the College of Counsellors, five lists are prepared, designated respectively: (1) The schedule of counsellors clear on the books in regard to attendance and dues; (2) The schedule of delinquent counsellors—counsellors delinquent in attendance or dues, or against whom charges may be pending; (3) The schedule of miscellaneous counsellors—counsellors who have died since the last annual meeting, or have offered their resignation, or have moved out of the State, or out of their respective congressional districts; (4) The schedule of active counsellors of twenty years' standing; and (5) The schedule of counsellors-elect who have qualified as provided in the Constitution".

With such preface, the revision was continued.

2. Revision of the Roll of Counsellors:

(a) Counsellors clear of the books: Acker, Allison, Ashcraft, Bailey, Bedsole, Brothers, Burdeshaw, Caldwell, Cannon, Chandler, Chenault, Crutcher, Cryer, Dabney, Doughty, Dowling, Dupree, Gragg, Granger, Greer, Hagood, Hatchett, Hayes, C. P., Hayes, J. P., Heflin, Hendrick, Hill, Hollis, Hough, Howell, Hubbard, Hutchinson, Jackson, James, A. D., James, N. G., Kelly, Leach, Lester, Lightfoot, Long, Lull, Martin, Mason, E. M., Mason, J. M., Mayer, McAdory, McCall, Miller, Moxley, Newman, Noel, Noland, Nolen, Oswalt, Price, Ralls, Redden, Rountree, Rucker, Sankey, Scott, Searcy, G. H., Searcy, H. B., Shropshire, Sledge, Smith, Speir, Tankersley, Taylor, Thomas, Tucker, Waldrop, Walker, Walls, Ward, White Whitman, Wilkerson, Williams, Williamson.

In the absence of objection, the President ordered the names of these counsellors, reported as clear of the books, passed.

(b) Delinquent counsellors: J. W. Jordan, dues.

(c) Miscellaneous counsellors:

(1) Life Counsellors who have died: J. E. Wilkinson.

(2) Active Counsellors who have died: L. E. Broughton, S. G. Cardon, M. O. Grace, Sibley Holmes.

(3) Active Counsellors who have moved: None.

(4) Active Counsellors who have resigned: W. C. Miles.

(5) Active Counsellors of twenty years' standing: W. M. Faulk, S. A. Gordon, G. L. Gresham, F. A. Lupton, J. S. McLester, W. E. Morris, W. H. Oates.

(6) Counsellors-Elect who have properly qualified: R. B. Beard, F. H. Craddock, J. R. Garber, D. S. Moore, G. H. Moore, M. L. Shaddix, D. H. Wright.

The President directed that the name of Dr. J. W. Jordan be removed from the roll; that the names of Drs. J. E. Wilkinson, L. E. Broughton, S. G. Cardon, M. O. Grace, and Sibley Holmes be transferred to the Book of the Dead; that the name of Dr. W. C. Miles be removed from the roll; that the names of Drs. W. M. Faulk, S. A. Gordon, G. L. Gresham, F. A. Lupton, J. S. McLester, W. E. Morris, and W. H. Oates be transferred to the Roll of Life Counsellors; and that the names of Drs. R. B. Beard, F. H. Craddock, J. R. Garber, D. S. Moore, G. H. Moore, M. L. Shaddix, and D. H. Wright be added to the Roll of Active Counsellors.

3. Revision of the Roll of Correspondents:

The Secretary having reported that a revision was not called for at this meeting, the President directed that the roll be closed until the next annual session.

4. Revision of the Roll of Officers:

Dr. J. R. Garber of Birmingham was elected President, his term being one year. Dr. A. B. Coxwell of Monroeville was elected Vice-President of the Southwestern Division, his term being four years. Drs. Fred Wilkerson, Montgomery, and M. S. Davie, Dothan, were elected Censors for five years.

Committees constitutionally provided to nominate counsellors brought in the following nominations: From the First District, K. A. Mayer and J. D. Perdue; from the Second District, Fred Wilkerson, J. A. Martin, F. L. Abernethy, L. D. Parker, and S. E. Jordan; from the Third District, G. R. Smith; from the Fourth District, S. B. Alison and S. Kirkpatrick; from the Fifth District, A. W. Ralls and W. D. Wood; from the Sixth District, J. S. Tucker, T. J. Anderson, and S. C. Meigs; from the Seventh District, R. H. Redden, V. L. Ashcraft, A. B. Price, and W. A. Gresham; and from the Ninth District, Cabot Lull, W. L. Cowles, and Groesbeck Walsh.

Whereupon Dr. G. H. Moore of Opelika, in a minority report, placed in nomination Dr. W. A. Lewis of Enterprise to fill the vacancy from the Third District.

There being no minority reports from other districts, Dr. R. S. Hill of Montgomery moved that the Secretary be instructed to cast the ballot of the Association for the nominees from the First, Second, Fourth, Fifth, Sixth, Seventh, and Ninth Districts. The ballot was so cast.

Drs. G. R. Smith and W. A. Lewis being nominees for the vacancy in the Third District and a vote having been called for, Dr. W. A. Lewis was declared elected.

The revision of the Roll of Officers completed, the President for the ensuing year, Dr. James R. Garber, was presented to the Association.

Dr. Garber: As I accept the gavel of this Association and come to the realization of the friendly and signal compliment my friends have bestowed upon me this morning, I find I am so overwhelmed I am utterly unable to express my appreciation and gratitude.

While this honor is outstanding and magnificent, I can not but feel you have veiled a call to service in your courteous consideration, a call to which I shall respond willingly, enthusiastically and diligently. But, gentlemen, the call can not be answered single handed. At this very earliest possible moment I ask your sympathetic and willing cooperation, I beg your indulgence, I plead for your counsel. With this team-work and by a strict adherence to the liberal and safeguarding principles of democracy, we shall lead ourselves against dis-

gruntled forces, against the inanities of a morbid psychology to a complete and glorious victory. (Applause.)

Miscellaneous Business

The following resolution, introduced by Dr. M. Y. Dabney, was adopted:

WHEREAS, This Association is about to adjourn its annual meeting, and

WHEREAS, It has proven one of the most successful and profitable meetings the Association has had, and

WHEREAS, The visiting members feel deeply appreciative of the many courtesies shown the organization; therefore be it

Resolved, That the members of the Medical Association of the State of Alabama give a rising vote of thanks to its host, the Montgomery County Medical Society; to the press for its just and impartial reports of our deliberations; to the hotels for their splendid cooperation and service; and to the good citizens of Montgomery, particularly Dr. and Mrs. R. S. Hill, for the many kindnesses shown.

Dr. W. D. Partlow moved that a unanimous vote of thanks be given the retiring President, Dr. Kirkpatrick, for the courteous and efficient way in which he dealt with the affairs of the Association during his incumbency.

Such a vote was accorded Dr. Kirkpatrick.

Whereupon the Sixty-Sixth Consecutive Annual Session of the Medical Association of the State of Alabama adjourned to meet in Birmingham, April 17, 1934.

DEPARTMENT OF PUBLIC HEALTH

BUREAU OF ADMINISTRATION

J. N. Baker, M. D.,

State Health Officer in Charge

THE VALUE TO HEALTH WORK IN THE USE OF R. F. C. FUNDS

One of the main features of malaria control is to insure that no new mosquito-breeding areas will be built into the State, and to eliminate existing areas as opportunity offers.

The permanent public health value of the latter was fully recognized by the administrators of the R. F. C. relief funds in Alabama, and in those counties having such breeding areas controllable through minor drainage operations as hand labor could accomplish, the governing authorities were

urged to use a portion of such funds for this work.

The result has been to date that many local foci of the disease have been eliminated throughout the State. To this extent the public health will be permanently benefited and malaria reduced. These demonstrations will undoubtedly lead to additional work from time to time in the future as the people experience the advantages of being freed of the disease. That public funds could be used in this manner is a recognition of the truths of the teaching and demonstrations which the State and County Health Departments have accomplished largely in the past decade. A worthwhile movement has gained impetus. There

has doubtlessly been more drainage and ditching for malaria control accomplished so far this year on a state-wide basis than has been the case in any previous year of the State's existence. Alabama will profit now and in the future from such work.

BUREAU OF LABORATORIES

James G. McAlpine, Ph.D., Director

DIPHTHERIA IMMUNIZATION WITH A SINGLE INJECTION OF PRECIPITATED TOXOID

Wells, Graham, and Havens¹, in a preliminary report, have described the precipitation of diphtheria toxoid with aluminum-potassium sulphate, following the method of Glenny and Barr². Havens and Wells³ have described the method used for the preparation of precipitated diphtheria toxoid and its antigenic activity. Antigenic tests in guinea pigs indicated that a high degree of immunity is produced, a single injection of 5 units resulting in protection against as much as 450 minimum lethal doses of toxin. This paper presents the results obtained in children with this product.

A total of 798 children in Lee County, Alabama⁴, have been given a single injection of the alum precipitated toxoid. Reactions, on the whole, either local or general, were *no greater or more frequent* than would be expected from ordinary toxoid in similar groups. Groups 1 and 2 consisted of children of school age who were found to be strongly Schick positive and who were retested from two to six months after the single dose of toxoid. Group 1 received toxoid containing 5 units per cubic centimeter, while group 2 received toxoid containing 10 units per cubic centimeter. Group 3 consisted of children given the one injection of toxoid (either 5 or 10 units) without a preliminary Schick test and later tested, from two to four months. Of the 613 children in group 3, 444 were in the age group 0 to 6 years. The result appear in Table 1.

TABLE 1

IMMUNITY STATUS OF 798 CHILDREN FOLLOWING A SINGLE INJECTION OF PRECIPITATED TOXOID

Group	Number of Children	Original Schick	Re-Schick		Negative %
			Positive	Negative	
1	86	All positive	8	78	90.7
2	99	All positive	6	93	93.9
1 & 2	185	All positive	14	171	92.4
3	613	Unknown	21	592	96.57

In some 500 children immunized by Drs. McGinnes and Stebbins⁵ of the Virginia State Board of Health with the precipitated toxoid, prepared by the Alabama State Board of Health Laboratories, 95 per cent of Schick positives were rendered Schick negative by a single dose. The reactions which they observed following the use of precipitated toxoid were no more noticeable than following crude toxoid. The results which they obtained using 0.5 cc. and 1.0 cc. are given in Table 2.

TABLE 2

RESULTS OBTAINED WITH 579 CHILDREN IMMUNIZED BY A SINGLE INJECTION OF PRECIPITATED TOXOID IN VIRGINIA

Age Group	(1) 0.5 cc. Toxoid		(2) 1.0 cc. Toxoid		(1 & 2) Both Groups	
	Number re-tested	% negative	Number re-tested	% negative	Number re-tested	% negative
0-4	6	100.0	14	100.0	20	100.0
5-9	120	95.0	146	96.6	266	95.9
10-14	141	92.9	89	94.4	230	93.5
15-19	43	97.7	6	100.0	49	97.5
20 and over	14	76.9	0	.0	14	76.9
All ages	324	93.8	255	96.1	579	94.8

The results in Table 1, group 1, and Table 2, group 1, are comparable since the 1.0 cc. inoculation in the former contained five units of toxoid and the 0.5 cc. inoculation contained the same amount of toxoid. Lee County found 90.7% Schick negative, and Virginia 93.8% Schick negative. Group 2 in Table 1 and Table 2 were given the same amount of toxoid with 93.9% Schick negatives in Lee County and 96.1% in Virginia.

Dr. G. W. McCoy, Director of the National Institute of Health, Washington, D. C., in a letter to Dr. J. N. Baker, State Health Officer, makes the following statement in regard to precipitated diphtheria toxoid:

"We believe that precipitated toxoid is much more active than crude toxoid and that a single dose of 1.0 cc. is an effective immunizing agent. Reactions following its use have certainly been no more noticeable than following crude toxoid, in fact the impression is pretty general that reactions from precipitated toxoid are *less frequent* and *less severe* than following the older product. Local induration following precipitated toxoid was observed in a number of cases, particularly following the 1.0 cc. dose. This induration was in no case objectionable and tended to clear up in about six weeks. It is very probable that this local reac-

tion is associated with the large immunity response. We see no reason why Alabama should not adopt this product for general use, and can readily appreciate the great saving in time and expense which will follow."

At a meeting of the Committee of Public Health of the State Board of Health on July 10, precipitated toxoid was adopted as the product to be used for immunization against diphtheria. The State Board of Health is very anxious to obtain the necessary data as to age, race, sex, Schick test results in order to evaluate the effectiveness of the product.

C. R. M.

REFERENCES

- (1) Wells, D. M., Graham, A. H., and Havens, L. C.: *Am. J. Pub. Health* 22: 648, 1932.
- (2) Glenny, A. T., and Barr, M. J.: *J. Path. & Bact.* 34: 131, 1931.
- (3) Havens, L. C., and Wells, D. M.: *J. Inf. Dis.* To be published.
- (4) Graham, A. H., Murphree, L. R., and Gill, D. G.: *J. A. M. A.* 100: 1096.
- (5) McGinnes and Stebbins: Personal communication.

BUREAU OF PREVENTABLE DISEASES

D. G. Gill, M. D., Director

TUBERCULOSIS AND THE PUBLIC HEALTH NURSE

In this, as well as other phases of public health nursing, the nurse is concerned with the spread of the disease rather than with the bedside care of the patient.

However, the patient is the primary concern of the family. The interest of the family centers in getting the patient well; not in keeping the other members well. The patient is the nurse's entree into the home; if she has no suggestions to offer for his welfare she loses a valuable opportunity to gain the confidence of the family and to proceed with the preventive program. These reasons, combined with the fact that tuberculosis is a long drawn out process and usually requires close supervision to prevent its spread, explain why the nurse is apparently more interested in tuberculosis cases than in cases of other diseases.

But first of all, the nurse must know that the patient or family has been informed as to the diagnosis of the case. It is impos-

sible to do constructive work in the family where the facts have been withheld. It is only with the knowledge and consent of the family physician that the nurse visits in homes of tuberculous patients, and his instructions are carried out as carefully as if the nurse were taking individual care of the patient for him.

Since the contacts are the real concern of the public health nurse, her chief function is to assist them in maintaining the highest possible standards of health. This she accomplishes by teaching personal hygiene and recommending physical examination by the family physician.

Individual records are kept by the nurses on each contact of a case. At each visit to the patient, any significant change in the condition of the contacts is recorded. By this method it is she who can call the physician's attention to some condition that would probably not come under his observation until the contact actually felt ill. It is amongst those individuals living in intimate relationship to a patient that most new cases of tuberculosis arise, hence the need of supervision by both physician and nurse.

C. C.

BUREAU OF SANITATION

G. H. Hazlehurst, Director

MUNICIPAL MOSQUITO CONTROL MEASURES USED IN ALABAMA

Drainage, where feasible, is recognized by authorities as the most important means of mosquito control. This measure with several others, namely, oiling, Paris green dusting, emptying of artificial containers, filling ponds and stocking ponds with gambusia (top minnows) have been used successfully in municipal mosquito control work in Alabama.

The type mosquito prevalent determines directly the control measures used. An article in the preceding issue of this Journal discussed the type and sources of mosquitoes most common in Alabama. Means for controlling these mosquitoes only will be discussed here.

The most effective control measure for the anopheles mosquitoes, one type of which transmits malaria, is the elimination of the breeding area through drainage or

filling. Where this can not be accomplished, the weekly application of a larvicide as oil or Paris green is indicated. Occasionally clearing and cleaning and subsequent stocking of the breeding areas with a predacious top minnow (*Gambusia affinis*) is employed.

A combination of measures is necessary for culex mosquito control. Often, oil in combination with phenols is necessary where production is taking place in pools and streams, containing sewage or other organic matter. Drainage is often used to limit the size and extent of such areas. Where production of this type is occurring in water containers, inspection is necessary for their location. If they can not be emptied oiling is necessary.

Routine inspection for artificial water containers about premises is essential for the control of *Aedes egypti* (stegomyia). Containers are either emptied weekly or stocked with top minnows. The cooperation of householders is essential to the control of this mosquito.

Among the less important type, considering the State as a whole, is the *Aedes sollicitan* or salt marsh mosquito. It is usually controlled by stocking the breeding area with larvae-destroying fish or by eliminating the tide water by ditching, filling and diking, or tide gating.

Another less important type of mosquito in Alabama is the *Aedes triseriatus*. It is usually controlled by filling the tree holes, in which it breeds, with sand or other similar material.

The *Psorophora sayi* is occasionally produced in wooded areas on the outskirts of towns. Favorable wind currents at the proper time are required to produce a serious infestation which at the worst will last only a few days. The possible benefit resulting from control operations is not considered commensurate with the cost of such work. Consequently, it is rarely undertaken.

C. C. K.

Sunlight and Health—Excess of sunlight is known to cause two types of disturbance, physical lassitude, and nervous irritability, the former apparently due to the heat, the latter to the light radiations particularly.—*Emerson, Am. J. Pub. Health, May 1933.*

CURRENT STATISTICS

*PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA

	May	June	Estimate ¹ Expectancy June
Typhoid	22	65	99
Typhus	35	56	5
Malaria	76	184	290
Smallpox	23	4	63
Measles	431	137	404
Scarlet fever	33	37	32
Whooping cough	225	195	190
Diphtheria	25	37	32
Influenza	66	23	52
Mumps	166	38	59
Poliomyelitis	1	2	5
Encephalitis	5	4	4
Chickenpox	68	18	68
Tetanus	2	8	4
Tuberculosis	220	254	444
Pellagra	55	97	129
Meningitis	3	5	3
Pneumonia	110	67	118
Syphilis (private cases)	172	168	162
Chancroid (private cases)	2	4	7
Gonorrhea (private cases)	100	139	165
Ophthalmia neonatorum	1	2	1
Trachoma	1	0	0
Tularemia	0	0	1
Undulant fever	0	5	1
Dengue	0	0	1
Rabies—human cases	0	0	0
Positive animal heads	75	64	—

*As reported by physicians and including deaths not reported as cases.

The Estimate Expectancy represents the median incidence of the past nine years.

PROVISIONAL MORTALITY STATISTICS

Alabama, May 1933

CAUSE	Number of Deaths Registered May 1933			Annual Rate per 100,000 Population		
	White	Colored	Total	May 1933	May 1932	May 1931
ALL CAUSES	1023	957	1980	850.7	947.4	1017.7
Typhoid fever	3	7	10	4.3	3.0	2.2
Smallpox					0.4	
Measles	4	1	5	2.1		8.3
Scarlet fever						1.3
Whooping cough	11	5	16	6.9	9.1	4.8
Diphtheria		3	3	1.3	2.2	1.3
Influenza	27	29	56	24.1	31.8	36.3
Pneumonia, all forms	45	39	84	36.1	62.3	79.2
Poliomyelitis	1		1	0.4	0.4	1.7
Tetanus	2	3	5	2.1	2.6	2.6
Tuberculosis, all forms	53	97	150	64.4	78.4	90.6
Tuberculosis, pulmonary	50	87	137	58.9	73.1	78.8
Malaria	6	1	7	3.0	2.6	2.6
Cancer, all forms	83	32	115	49.4	54.0	55.1
Diabetes mellitus	9	6	15	6.4	7.4	10.5
Pellagra	7	17	24	10.3	11.7	16.2
Cerebral hemorrhage, apoplexy	75	54	129	55.4	55.7	66.1
Diseases of heart	158	107	265	113.8	110.6	129.1
Diarrhea and enteritis						
Under 2 years	30	18	48	20.6	18.7	9.6
2 years and over	9	3	12	5.1	9.6	9.2
Nephritis	98	76	174	74.7	86.6	78.0
Puerperal state, total	8	13	21	9.0	17.8	14.9
Puerperal septicemia	1	5	6	2.6	5.2	4.4
Congenital malformations	11	10	21	9.0	5.2	7.9
Congenital debility and other diseases of early infancy	53	33	86	36.9	50.1	49.5
Senility	10	14	24	10.3	16.1	19.7
Suicides	15	2	17	7.3	12.6	9.2
Homicides	16	25	41	17.6	20.9	20.1
Accidental burns	4	4	8	3.4	3.5	5.2
Accidental drownings	10	9	19	8.2	3.5	3.1
Accidental traumatism						
by firearms	2	1	3	1.3	3.5	6.6
Mine accidents	2		2	0.8	1.7	1.3
Railroad accidents	5	5	10	4.3	3.5	3.1
Automobile accidents	12	9	21	9.0	10.0	15.3
Other external causes	51	15	66	28.3	19.1	14.0
Other specified causes	147	158	305	131.0	144.9	151.9
Ill-defined and unknown causes	56	161	217	93.2	92.3	91.1

Book Abstracts and Reviews

The Collected Papers of the Mayo Clinic and the Mayo Foundation: Volume XXIV—1932. Edited by Mrs. Maud H. Mellish-Wilson and Richard M. Hewitt, B. A., M. A., M. D., Octavo of 1,205 pages with 233 illustrations. Philadelphia and London: W. B. Saunders Company, 1933. Cloth. \$11.50 net.

The number of papers written annually by the staff of Mayo Clinic has not diminished. The articles included in this volume occupy 1,100 pages and another 100 pages are occupied by the titles of papers for which there was not room in this volume. Most of the articles deal with subjects of practical clinical importance, but a few deal with purely research matter.

The portion on gastric lesions is particularly well done and the reader's attention is called to an article by Alvarez on "Standards of Normal in Gastric Secretion". The subject of "Peptic Ulcer" is rather thoroughly covered. The different types of gastric lesions occurring in Germany and the United States are spoken of in detail and seem to justify the radical type of gastric surgery performed by German operators. An article by Balfour seems to indicate that surgical treatment of hemorrhagic duodenal ulcer is increasing in frequency. An article on "Surgery of the Biliary Tract" by Judd covers the subject thoroughly. For an exceptionally well written article on the subject of carcinoma of the colon the reader is referred to an article by Rankin. Buie's articles on "Carcinoma of the Rectum" and "Fistula of the Anus" are particularly valuable. Bumpus' article on "Transurethral Prostatic Resection" emphasizes advantages of this method over the old operative procedure. The section on diseases of the thyroid gland is of outstanding value, particularly the article by Dr. Charles Mayo in which are outlined the important advances in thyroid surgery. The article by Allan and Scherer on "Insulin Allergy" stresses the relative frequency with which this condition is encountered. Several articles dealing with "Orthostatic Albuminuria" and other types of albuminuria are included. Other articles cover almost every specialized field of medicine and surgery.

On the whole this year's volume from the Mayo Clinic is as valuable as the previous volumes—a statement which is within itself a high recommendation.

J. L. B.

Surgical Anatomy: By C. Latimer Callander, A. B., M. D., F. A. C. S., Assistant Clinical Professor of Surgery and Topographic Anatomy, University of California Medical School; Associate Visiting Surgeon to the San Francisco Hospital. With a Foreword by Dean Lewis, M. D., Sc. D., LL. D., F. A. C. S. 1,115 pages with 1,280 illustrations, some in colors. Philadelphia and London: W. B. Saunders Company, 1933. Cloth \$12.50 net.

The success of a surgical anatomy depends to a large extent on illustrations and consideration of the practical application of the various anatomical points. Dean Lewis, in the foreword to Callander's new work, says, "The book is planned with the definite idea of indicating the paths of surgical approach to the pathological process which is to be removed or corrected". While the ordinary textbook of anatomy deals with the subject of structure without reference to its application to clinical

work, an anatomy like Callander's is practical in every respect. It deals not with a lifeless science but with an essential field of every-day medicine and surgery. Anatomical facts are presented in terms of their clinical importance. Important surgical landmarks are emphasized; incisions and operative procedures are well illustrated and the anatomical relations of common pathological conditions are well described.

The illustrations in this volume are well selected, well drawn and well labeled. The publishers have made no attempt to save expense but have printed an illustration two or three times when the nature of the text made it necessary. This saves the reader a great deal of trouble in turning back to pages. Anyone who finds occasion to consult anatomy frequently will get quicker information from a volume of this type than from half a dozen ordinary textbooks of anatomy.

C. K. W.

Truth About Medicines

PROPAGANDA FOR REFORM

Burnham's Soluble Iodine and Burnham's Iodine Ointment Not Acceptable for N. N. R.—The Council on Pharmacy and Chemistry reports that Burnham's Soluble Iodine, marketed by the Burnham Soluble Iodine Co., Auburndale, Mass., was rejected by the Council in 1915 as a semisecret preparation marketed by means of extravagant and dangerous therapeutic claims. In 1929, a communication was received from the consulting pathologist of the Burnham Soluble Iodine Co., which seemed to indicate that the firm was anxious to make its product eligible for admission to New and Non-official Remedies. The product was stated to have the following composition: "Free Iodine 3.5%, Hydrogen Iodide 1.5%, Total Iodine 5.0%, Ethyl Alcohol 42.0%." As a result of the Council's criticisms of the claims advanced for the product, proposed revisions of the advertising material were submitted from which the objectionable features had been essentially removed. The current advertising shows that the proposed revisions have not been carried into effect but that instead the product is being marketed with claims which are as unwarranted as those which caused the Council to reject the product in 1915. There is no evidence that Burnham's Soluble Iodine will do anything more than potassium iodine. Recently the firm has marketed Burnham's Iodine Ointment, said to contain free iodine, salicylic acid, methyl-sa-

licylate, menthol and anesthesin (ethyl) aminobenzoate—U. S. P.) in a petrolatum base, all in unstated proportions. This appears to be an unscientific preparation containing an excessive number of active ingredients, the presence of only one of which is indicated in the name. As with Burnham's Soluble Iodine, many extravagant claims are made for this ointment. The Council found Burnham's Soluble Iodine and Burnham's Iodine Ointment unacceptable for New and Nonofficial Remedies because they are semisecret preparations marketed with extravagant and unwarranted therapeutic claims. (Jour. A. M. A., July 1, 1933, p. 33)

Bacillus Bulgaricus and Kefir Fungi Preparations Omitted from N. N. R.—The Council on Pharmacy and Chemistry reports that for some years it has retained in New and Nonofficial Remedies the accepted *Bacillus bulgaricus* preparations only on condition that claims for them were limited to recommendations for the preparation of soured milk and provided especially that no claims were made for the implantation of *B. bulgaricus* in the intestine. The Council further held that milk soured by the addition of pure lactic acid has essentially the same therapeutic effect as milk soured by bacterial fermentation. The Council deemed it unwise to retain in future editions of New and Nonofficial Remedies preparations of *Bacillus bulgaricus* and of Kefir fungi, since in addition to being thus superfluous, they are in general indefinite, complex and variable. The Council voted to admit all *Bacillus bulgaricus* preparations and Kefir fungi preparations from New and Nonofficial Remedies. These include: *Bacillus Bulgaricus*-Squibb, B. B. Culture and Kefir Fungi. (Jour. A. M. A., July 1, 1933, p. 34)

Allisatin "Sandoz"—Garlic.—According to the label, Allisatin tablets are stated to contain the equivalent of 175 grains of the fresh drug (garlic). In the advertising it is stated that Allisatin is "garlic specially treated with vegetable charcoal." The Sandoz Chemical Works, Inc., which markets Allisatin, has not requested an examination of the product by the Council on Pharmacy and Chemistry, and so far the product has not been examined in the A. M. A. Chemi-

cal Laboratory. The use of garlic as a medicine, as well as condiment, can be traced to earliest antiquity, and periodically it has been exploited for this or that condition. Preparations of garlic have not been shown to be of value, except perhaps as irritant expectorants with local action on the stomach. The medical profession of this country appears not to have been impressed with the reported value of garlic preparations. (Jour. A. M. A., July 1, 1933, p. 70)

Euphydigital Not Acceptable for N. N. R.—The Council on Pharmacy and Chemistry reports that Euphydigital (Byk-Guldenwerke, Berlin, Germany; Byk, Inc., New York, American agents; Adolphe Hurst & Co., Inc., New York, General Distributors) is said to be a combination of Metaphyllin and 0.1 Gm. of powdered digitalis leaf ("150 frog doses"). Each suppository is said to contain 0.2 Gm. of Metaphyllin and 0.15 Gm. of powdered digitalis leaf ("225 frog doses"). Metaphyllin (formerly called Euphylin) is said to be a combination of approximately 78 per cent of theophylline with ethylenediamine, having the advantage of being more soluble than theophylline. Advertising for Euphydigital received by a physician in April, 1932, states that "the action of digitalis can be considerable increased by the simultaneous administration of Metaphyllin." This is a remarkable statement in view of the fact that up to about 9 grains of digitalis daily is recommended in the form of Euphydigital. Among the great advantages claimed for Euphydigital are: "By reason of the vaso-dilant action of Metaphyllin, particularly that on the coronary vessels, Euphydigital may also be given in cases of heart decompensation with raised blood-pressure for combating the insufficient symptoms, as the bloodpressure-decreasing characteristic of the Metaphyllin constituents forms a safeguard against any further rise in the bloodpressure by means of the digitalis." It is well known that patients suffering with cardiac diseases and nephritis often require both digitalis and one of the purines, such as theobromine or theophylline, and it is considered in the last degree irrational to use a mixture of digitalis with any other substance. There is no evidence that Metaphyllin possesses the ca-

capacity for causing marked coronary dilatation in cases in which it is imperatively needed; and it is misleading to state that digitalis constricts the coronaries, because there is no evidence that digitalis has such action, especially when used in the presences of coronary sclerosis. The Council declared Euphydigital unacceptable for New and Nonofficial Remedies because it is an irrational mixture of digitalis and a theophylline preparation marketed under an uninforming, proprietary name, with exaggerated and unwarranted claims for its therapeutic value. (Jour. A. M. A., July, 8, 1933, p. 124)

Ralston Wheat Oata (New Name) New Oata (Former Name) Not Acceptable.—The Committee on Foods reports that the Ralston Purina Company, St. Louis, has changed the name for its previously accepted "New Oata", a mixture of rolled oats and wheat, much the greater proportion of which is oats, to "Ralston Wheat Oata". The new name connotes that the wheat is in greater proportion than is the oats, which is contrary to fact. The label states, "This unusual porridge combines the distinctive flavors and the abundant health-building qualities of whole rolled wheat and whole rolled oats." Wheat and oats do not have "health building qualities" any more than do other common foods. The company has not expressed itself as willing to change the inappropriate name and label statement. The acceptance of this product is therefore being withdrawn. (Jour. A. M. A., July, 8, 1933, p. 125)

Intravenous Use of Barbitol Compounds (II).—The Council on Pharmacy and Chemistry reports that in 1931 it decided on definite limitations for the intravenous use of barbitol compounds for induction of anesthesia and sponsored the following statement: "Their intravenous use should be limited for the present to conditions in which oral administration is not feasible either because the patient is unconscious, as in cerebral hemorrhage, eclampsia, or status epilepticus, or because he resists, as in delirium, or because a very prompt action is imperative, as in convulsion from local anesthesia." In the consideration of sodium amytal and the brands of pentobarbital sodium, the Council recognized that these drugs might be administered intra-

venously in the conditions mentioned in its report and laid down certain stipulations with regard to propaganda for their intravenous use. In the recent consideration of Pernoston, a barbituric acid derivative marketed only in injectable form, the question was raised as to whether or not in the light of accumulated experience it was desirable to relax the limitations which the Council had placed on the intravenous use of barbitol compounds. A questionnaire was sent to a selected list of surgeons, anesthesiologists and others asking whether they considered that the time had arrived when the Council should agree to the advertising of preparations of soluble barbiturates for intravenous injection for induction of anesthesia. The Council has given careful consideration to the replies of the questionnaire, and it believes that the evidence overwhelmingly sustains its previous conclusion concerning the limitations for the use of the soluble barbiturates in the induction of anesthesia.

Addition of Phenolphthalein, Acetylsalicylic Acid (Aspirin) and Other Drugs to Chewing Gum, Candy and Food Articles.—The Committee on Foods reports that medicating common food articles with drugs—such as the addition of phenolphthalein to chewing gum, acetylsalicylic acid (aspirin) to candy, and senna to bread—tends to promote indiscriminate self-medication and is to be unqualifiedly condemned as a menace to public health. (Jour. A. M. A., July 22, 1933, p. 281.)

Sac-A-Rin Brand Apricots, Bartlett Pears, Muscat Grapes, Royal Anne Cherries, Tidbits, Hawaiian Pineapple, Seedless Grapes, Yellow Cling Peaches and Whole Ripe Kadota Figs; Acceptance Withdrawn.—The Committee on Foods reports that the manufacturer, the Kings County Packing Company, Ltd., Oakland, Calif., has not provided the complete list of the ingredients and quantities thereof, chemical analyses, specifications or description of materials used in its preparations, and description of manufacture being required for all accepted foods by the Committee's present rules and regulations. The acceptance of these products is therefore withdrawn. (Jour. A. M. A., July, 8, 1933, p. 125)

Miscellany

A SNARL OF HATE

I was once the greatest cause of death in the world.

Yet, I am only one eight-thousandth of an inch in length.

My ancestry is obscured in the mists of ancient Chinese history.

Yet, I remained unseen by the eye of man until fifty years ago.

Since 1904 the slaughter I have been able to accomplish in this country has been reduced two-thirds.

I rejoice, however, in the fact that I am still the greatest cause of death between the ages of 15 and 45.

Quack doctors are my allies, because they prescribe medicines to overcome me.

There is no medicine known that can do that.

Rest in bed, fresh air, sunshine, good food and a good doctor are the only combination that can beat me.

Even then I frequently win if I am not attacked promptly.

I hate all tuberculosis associations, because they tell people how I can be overcome and help them do it.

I am the tubercle bacillus and I hate all mankind—*From Bulletin of Ky. State Board of Health.*

WHY ADVERTISING PAYS

The official State Medical Journal is read by physicians in active practice. They are the doctors who buy products and prescribe them for their patients.

The State Medical Journal is jointly owned by its readers. They have a personal interest in patronizing their own advertisers.

The Journal intensively covers its own field. It is believed to have more paid circulation there than any five Journals of general circulation.

It confines its circulation to a limited field. Its editorials and news pertain to that territory. It is full of reader interest.

All advertising is carefully edited. Questionable advertising is excluded. Readers know the advertising pages are trustworthy. Ethical advertisers are solicited.

ADVERTISER'S NOTE

The discovery of Vitamin D has been of the greatest importance to mankind. Because of this discovery, rickets—once a familiar childhood menace—is now fast becoming a rare disease in civilized countries.

The value of Vitamin D in the dietary of the pregnant woman can not be over-emphasized. For it is largely in prenatal life, as McCollum says, that "the size of the fund of that something which we call vitality is determined. It is then that the quality of the teeth, the skeleton, and the perfection of form are determined."

Cocomalt mixed with milk is useful in the dietary of expectant mothers—not only because it has almost twice the food-energy nourishment of milk alone, not only because it provides extra proteins, carbohydrates and minerals (calcium and phosphorus)—but because it is rich in Vitamin D. Cocomalt is licensed by the Wisconsin Alumni Research Foundation under Steenbock Patent No. 1,680,818, and it contains not less than 30 Steenbock (300 ADMA) units of Vitamin D per ounce—the amount used to make one glass or cup.

ACCEPTED DEVICES FOR PHYSICAL THERAPY

The following products have been accepted by the Council on Physical Therapy of the American Medical Association for inclusion in its list of accepted devices for physical therapy.

Titus Intravenous Infusion Apparatus.—An apparatus for intravenous injection of dextrose solutions consisting essentially of two parts: (1) that comprising the tank, the timing and volume gage, the dial valve, and the base, and (2) the heating unit with infusion thermometer. It is claimed that this instrument, by regulating the rate of intravenous injection of dextrose solution closely to the physiologic ability of the body to utilize dextrose, gives the following therapeutic effects: (a) It permits a maximum therapeutic effect from a given amount of injected dextrose by assuring maximum utilization and by preventing wasteful "spill" through the kidneys; (b) it provides accurate dosage of dextrose; (c) it prevents overstimulation of endogenous insulin production, since the physiologic rate of utilization is not exceeded; (d) it prevents ve-

locity reactions; (e) it prevents the injection of cooling or cold solutions. An additional therapeutic feature, according to the firm, is the valve of this instrument especially designed for use in giving venoclysis or "intravenous drip"; and that it also may be used for dextrose in salt solutions and acacia dextrose. The company claims that citrated blood transfusions may be given and heated while being given. No adjustment is required for heat control. Overheating does not occur if the flow of fluid into the vein is proceeding properly. Feick Brothers Company, Pittsburgh. (Jour. A. M. A., April 8, 1933, p. 1104)

Collins Oxygen Tent.—A serviceable tent providing oxygen therapy for treatment of those cases amenable to oxygen therapy, such as pneumonia and certain cardiac diseases. The unit was investigated in a clinic acceptable to the Council. The investigation substantiated the physical and therapeutic claims and met the tentative specifications of minimum standards for oxygen tents adopted by the Council. Warren E. Collins, Inc., Boston, Mass. (Jour. A. M. A., June 10, 1933, p. 1864)

O₂-CO₂ Metric Twin Unit for Small Cylinders.—An apparatus for respiration therapy, particularly designed for resuscitation of the new-born or for use in the operating room to resuscitate an individual asphyxiated by gas. As a unit for resuscitation, it has the advantage of being independent in the establishment of a proportion of oxygen-carbon dioxide mixture. The gas mixture is easily adjustable, according to the desire of the operator. Foregger Company, Inc., New York, N. Y. (Jour. A. M. A., July 1, 1933, p. 32)

Burdick Diathermy Machine Mode' D-2.—The unit is claimed to provide sufficient capacity for full range medical and surgical diathermy practice commonly encountered in office and institution, and to produce suf-

ficient electrical energy to provide heat for the treatment of the indications mentioned in the Handbook of Physical Therapy. For surgical work the concern claims that the machine generates enough electrical power for use in electrocoagulation of tonsils and in certain forms of surgery when indicated. The apparatus is arranged for the production of Oudin current, a high-frequency current of higher voltage than the high frequency currents used for ordinary diathermy treatment. Burdick Corporation, Milton, Wis. (Jour. A. M. A., July 8, 1933, p. 122.)

FROM THE COMMITTEE ON FOODS

"Trick" Claims in Food Advertising.—The Committee on Foods of the American Medical Association reports that claims in food advertising implying for the food advertised the merits of something more valuable (such as milk) with which it may be admixed for use are of the nature of "trick" advertising. These claims are so constructed grammatically as to connect the stated values with the advertised food, whereas such values in large part are provided by the other products of the mixture. Food advertising should be truthful in statement and by implication. "Trick" advertising and all other misleading forms are harmful to food advertising and merchandising generally. (Jour. A. M. A., July 22, 1933, p. 281.)

NEXT ANNUAL MEETING

BIRMINGHAM

APRIL 17-19, 1934

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A house doctor is appointed July 1st and Jan. 1st

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For Nurses and Graduates of High School
CLASSES LIMITED TO SIX

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PROPHYLAXIS AND TREATMENT OF INFECTIOUS DIARRHEA*

By
ALFRED A. WALKER, M. D.
Birmingham, Ala.

It is a well known fact that diarrhea, in one form or another, leads all other diseases as the cause of death in infants and young children. These diarrheal diseases are largely preventable and infectious diarrhea in particular constitutes a public health problem of primary importance.

Diarrheal diseases have always been of great interest to those paying particular attention to the diseases of children, and, in looking over the literature on the subject, one is immediately struck with the confusion which exists in the classification and nomenclature of these disorders. Every medical center has its favorite classification and consequently the disease of which this paper treats is known as summer diarrhea, gastro-enteritis, enterocolitis, or colitis, and infectious diarrhea. In the South the disease is generally known as colitis signifying an inflammation of the colon. The term colitis, or infectious diarrhea, should be applied only to those cases which have definite and constant inflammatory lesions of the colon and lower portion of the ileum; that is, there is an infection of the intestinal wall itself in contradistinction to fermental diarrhea in which there is fermentation of the intestinal contents with formation of irritating products. Clinically, these cases are characterized by the presence of blood, mucus and pus in the stools. It is doubtful if one is ever justified in making a diagnosis of infectious diarrhea or colitis in the absence of blood and mucus.

I prefer to use the term infectious diarrhea in order to stress the fact that this is

an acute infectious and contagious disease, caused, almost without exception, by a specific organism, the dysentery bacillus. It is as much an infectious disease as typhoid fever; in fact, the two diseases have many points in common. Both are spread by food, filth and flies. Both occur in epidemics. Public health measures which reduce the morbidity of one also reduce the morbidity of the other. Both recover through the development of immune bodies in the host and both have definite and constant pathologic changes in the intestinal canal. There is really no valid reason why the disease should not be called dysentery, as indeed it is called when it occurs in the adult.

The disease occurs most commonly in the hot months of the year. In our climate, the first hot days of May or June furnish most of the cases. Further north in the latitude of Boston and New York, July seems to be the worst month.

In Birmingham, we seldom see infectious diarrheas in our private practice, but we do see entirely too much of it in the wards of our Children's Hospital. Most of the cases come from the poorer parts of the city or from the surrounding country districts and are due mainly to ignorance on the part of the parents.

The bacteria responsible for the disease are taken in by the mouth and consequently we look for contaminated food as the vehicle of infection. This is particularly true of cow's milk. The bacilli may also be carried to the mouth in water, on the hands, through the agency of flies and on various objects put into the infant's mouth. There is evidence, however, that other factors, such as lowered resistance, etc., enter into the problem. This lowered resistance may result from hot weather, from malnutrition caused by such things as gross errors in feeding, parenteral infections or infections in parts of the body other than the intesti-

*Read at the Homecoming Meeting of the Bullock County Medical Society, Union Springs, August 9, 1933.

nal tract. Whatever the exact method of infection is, it is certain that the introduction of organisms from without is the most important factor to be considered.

I have spent this time on the etiology of the disease because it is important to have a correct understanding of this feature of the disorder to properly outline its prophylaxis and active treatment.

PROPHYLAXIS

There is no field in preventive medicine more attractive than that designed to prevent unnecessary deaths from diarrheal diseases in infants and young children; furthermore, the results obtained from efforts directed to this end will well repay one for time and energy spent. Our efforts must be educational primarily and should start before the baby is born. First in importance must come insistence on the part of physicians that mothers nurse their babies. The obstetrician can do more perhaps than the pediatrician in assuring the proper establishment of an adequate supply of breast milk in the mother.

The first week after delivery determines whether the mother will be able to successfully nurse her infant. If the baby is unable to apply stimulation to the breasts by vigorous nursing at regular intervals, starting a few hours after birth, the milk supply will never be adequate unless other means of stimulation are used. We are all familiar with the fact that a cow will go dry unless she is adequately milked and the same biologic fact holds true in the case of the human being.

It is at the time immediately following delivery that mothers should be taught that a normal infant needs only its mother's milk at least for the first few months of life. The mother should be told that weaning is a serious step and should be taken only on the advice of a physician competent to properly advise with her. In spite, however, of all that one does it frequently happens that the milk supply is not adequate for proper growth and development. If such is the case, one should not hesitate to employ artificial means of feeding to make up for the deficiency. In other words, it is much better to have a well nourished bottle baby than a malnourished one, even though it is fed at the breast.

Physicians should realize that infant feeding is not especially difficult, and they should take more interest in this branch of medicine. In years gone by, when most of us were in college, we were taught the percentage method of feeding—with so much of fat, protein and carbohydrate. All this, worked out with complicated mathematical formulae, made the whole subject rather formidable to us and magnified in our mind the intricacies of the problem. Modern methods of feeding are tending more and more to simplicity; that is, to simple dilution of whole milk with the addition of sugar in some form. I might say here also that the custom of sterilizing milk given to young children is increasing rapidly. Mothers should be taught that diarrhea is not always due to teething, but is an attempt on the part of nature to throw out something which is irritating the intestinal canal.

County Health Units might very profitably put on campaigns of education dealing with the common hygiene of infants. Various agencies can be enlisted in this work, such as churches, schools, etc. In Birmingham our Health Department has a corps of visiting nurses who are of great assistance in the instruction of mothers along these lines. Local health officers should see to it that only good, clean milk is sold in their communities. This entails dairy inspection, milk analysis (especially as to the bacteria count), and education of dairymen as to the proper method of caring for cows, milking them and caring for the milk until it is delivered to the consumer. Even with the best of care, it is never safe to give a young child raw milk. Therefore, the boiling of all milk should be insisted upon.

I would like to mention here also the increasing use of evaporated milk and the various milk powders in the feeding of infants. These foods are sterile and are easy to prepare. The addition of plain water makes, approximately, cow's milk. Evaporated milk is used very extensively in our city, and undoubtedly has done much to reduce the incidence of infectious diarrhea. The same thing can be said about the use of lactic acid milk in infant feeding. I mention condensed milk only to condemn it as a food for the rearing of healthy children. True, it is a sterile food but its composition is such that it does not supply the

proper material for healthy growth. Condensed milk babies are notoriously very poor in their resistance to disease and once attacked by infectious diarrhea their chance of recovery is small indeed.

In an agricultural county, such as this, I imagine most of the milk consumed is produced at home, or is produced by a neighbor who has a cow. People are always ready to believe that milk from their own cow is much cleaner and better than milk bought from the dairyman. Unfortunately, this is not always true. The practice of leaving milk to stand in open pans in order to allow it to cool, and to allow the cream to rise, increases the bacteria count enormously, especially in hot weather. This practice is usually followed in the average household and should be condemned.

The importance of flies in the spread of infectious diarrhea cannot be neglected, and so any measure taken toward the eradication of flies—especially around dairies and around the household—will have its effect on the reduction of morbidity from this disease.

Thus far I have outlined briefly what can be done along educational and public health lines to reduce the mortality from infectious diarrhea, but before leaving this phase of the subject I want to repeat that the most important thing to be considered is a clean milk which is made doubly safe by pasteurization or, in the case of young infants, by boiling.

Now, what can we, as physicians, do to stamp out this disease? What advice should we give a mother who has a baby about a year old? I will take it for granted that this hypothetical mother has done her duty and nursed her baby as long as her milk supply was adequate. She has weaned it or her breast milk has diminished to such an extent that weaning is necessary. She must know that colitis, or infectious diarrhea, starts from germs introduced into her baby's mouth. Therefore, everything that goes into the baby's mouth should be sterile. The nipples and bottles used in feeding should be sterilized by boiling. Pacifiers should not be used since it is impossible to keep them clean. If the thumb is used as a pacifier, the habit should be broken or the thumb kept clean. The baby should not be placed in the shade near the door-step

and allowed to play in the dirt and filth of the yard, a sight which is so often seen in the country. If allowed to play on the floor, a clean sheet should be spread for its playground. When preparing food for the baby the mother's hands should be thoroughly washed. This is especially important after changing the napkin. With the advent of hot weather, excessive clothing should be removed and the baby should be kept cool, receiving two or three sponge baths a day, if necessary, to achieve this end. In very hot weather the milk should be diluted and the amount of food generally should be reduced. No food except that which is thoroughly cooked should be given. This applies especially to the giving of raw fruit. No chance should be taken on infected milk, and so this must be sterilized by boiling and kept refrigerated until used. The baby and its food should also be protected from flies. It goes without saying that the food should be only that which is suitable for the child at its age, and no radical changes should be made without the advice of the physician. If the baby vomits, or has diarrhea, all food should be stopped and a doctor consulted at once.

Finally, the whole prophylaxis of infectious diarrhea can be summed up in one word—cleanliness, cleanliness of food (especially milk), of nipples, of bottles and of everything that goes into the baby's mouth.

TREATMENT

I said in the earlier part of this paper that this disease was an acute infectious and contagious disease with inflammation in the colon and lower part of the ileum. The treatment, therefore, divides itself into (1) measures to limit the spread of the disease to others and (2) active treatment.

Since it has been shown that flies spread the disease, the napkin should be changed immediately after it has been soiled and should be placed in a covered vessel containing some antiseptic solution. The attendant who cares for the baby's napkins should not care for the food of the patient or of other members of the family. When a napkin is changed, the hands should be thoroughly washed with soap and water and dipped in some antiseptic solution. I have repeatedly seen a mother or nurse develop dysentery when these points were not

carefully looked after. In other words, typhoid precautions should be taken.

The baby should be kept cool and all unnecessary handling should be discouraged. At the first symptoms, it should be put to bed and kept from walking about. In view of the fact that this is an acute infectious disease just as is typhoid fever, there is no specific medication which overcomes the infection. Consequently our treatment should be supportive, leaving the cure to the development of immune bodies in the patient. I want to emphasize the treatment of the patient and not the diarrhea, which is only a symptom. If seen early—and by early I mean in the first 24 hours—the intestinal canal should be emptied by an enema or colon irrigation from below. Cathartics had best be avoided. It has been a frequent experience to see an ordinary infection with a good prognosis become a severe one after the injudicious use of castor oil or other drastic purgative. The colon irrigation should consist of plain warm water, or salt solution, and should be copiously used until the solution comes back clear. All food must be stopped for the time being—at least until the vomiting has ceased, which it usually does in 24 to 36 hours. During this period of starvation, fluids must be supplied in abundance—plain water, either cold or warm, or, if difficulty is had in making the child take plain water, weak tea sweetened with saccharine. There is no objection to flavoring the water with orange juice if necessary. Whatever method is used, water must be given in excess to make up for the water loss taking place as a result of the diarrhea. At least a quart of water or other fluid in 24 hours must be insisted upon. This important part of the treatment is difficult to obtain in the home and little reliance can be placed on the statement of the untrained attendant; therefore, all fluid intake should be measured.

While the temperature may be high in the beginning of the disease, it must be remembered that this is not a disease of very high fever. However, if the temperature is excessively high it can be controlled by cool baths or sponging.

After the starvation period, which lasts from 24 to 48 hours, we are confronted with the problem of furnishing nourish-

ment to the patient. Here I would like to say that starvation in the treatment of infectious diarrhea has been too frequently carried to an extreme, and many of the cases which linger on for two or three weeks, or a month, die not from infectious diarrhea but from starvation. We have all seen low diets in the treatment of typhoid fever give way to more liberal feeding with consequent lowered mortality. In this disease also the practice of more liberal feeding has superseded the prolonged starvation which was so common at one time.

Most children will do best on a food rich in starch and carbohydrates; so we order barley water or rice gruel given every three or four hours. If the child has teeth and is able to chew, a cracker or piece of toast is permissible. One must bear in mind that the prolonged use of barley water as it is commonly prepared, with one tablespoonful of the flour to one pint of water, is relative starvation since its caloric value is only 2 to the ounce. Obviously, this low intake is not sufficient to sustain life indefinitely. I frequently note the appearance of edema in children who have been on a low carbohydrate diet for a long period of time. This is the edema of starvation and calls for the addition of protein to the food. At the earliest possible moment protein should be added to the diet and this can be accomplished by the addition of fat-free buttermilk in small quantity to the barley water—for example, one ounce at each feeding to begin with. If this is well borne, as evidenced by the appearance of yellow particles of feces in the stools, the buttermilk should be increased and the barley water diminished until at last the feeding consists of 8 ounces of buttermilk every 4 hours with toast and orange or lemon gelatine. When this point is reached an attempt to increase the food value of the buttermilk should be made by the addition of some form of sugar, such as dextri-maltose or Karo syrup. The sugar can be added in amounts of one teaspoonful to each feeding and rapidly increased.

In young infants, I not infrequently increase the food value of barley water by adding Dryco, using one or two level teaspoonfuls to each feeding and gradually increasing until the proper amount for the age is given. Boiled skimmed milk can be

added to the cereal decoction in the same way as outlined above.

It follows, then, that in the feeding of these cases one must feel his way and increase food as the condition of the baby warrants, paying more attention to toxemia, as evidenced by vomiting, abdominal distention, increased temperature, etc., than to the number or appearance of the stools. Above all things do not treat the diarrhea and let the baby die from starvation.

The ordinary case of infectious diarrhea treated expectantly as outlined above lasts from 10 days to 2 weeks, at the end of which time a return to the regular diet should be possible.

In looking over the charts of the many cases we have had in the Children's Hospital one is immediately struck with certain errors in treatment which have been made before the patient was admitted. First, almost invariably these infants and young children have received a large dose of castor oil. This has usually been given by the mother on her own initiative without consulting a doctor, but it occasionally happens that she has done it on the advice of her family physician. This initial cathartic invariably makes matters worse and adds very materially to the discomfort of the patient and the severity of the infection.

Coupled with the injudicious use of cathartics, the patients usually have some degree of dehydration, caused by fluid starvation and a lack of proper balance between fluid loss and fluid intake. This dehydration is often of such severity that the whole problem centers on its treatment and unless vigorous measures are taken for its correction the patient will succumb with all the symptoms of acidosis, such as obstinate nausea and vomiting and hyperpnea. If the dehydration is of a minor degree, the mere giving of water or other fluids in abundance by mouth will frequently correct it. If, however, the dehydration is severe, and especially if vomiting is present, fluid will have to be given parenterally. This can be done by giving Ringer's solution or salt solution subcutaneously, intraperitoneally or intravenously. It is possible to give a small infant 200 cc. of salt solution by hypodermoclysis two or three times a day.

If the abdomen is not distended, 400 to 500 cc. can be given in the peritoneal cavity with perfect safety. Transfusions of whole blood from a suitable donor are a most valuable procedure and frequently serve to correct what seems to be a hopeless condition.

DRUGS

Medicinal agents in the treatment of infectious diarrhea are of comparatively minor importance and they should not be employed without a clear indication for their use. The use of drugs is entirely for the purpose of relieving unpleasant and distressing symptoms and the continual disturbing of the patient to dose it with medicine is to be discouraged.

It is difficult for me to see how a dose of castor oil, or other cathartic, does anything but harm in a patient who is already having fifteen or twenty bowel movements a day. Under these conditions it can only act as a further irritant to an already intensely irritated intestinal tract. If there is undue abdominal distention it is much better to rely on colon irrigations to relieve this symptom. Colon irrigations do considerable good in the beginning of the disease, but I am very doubtful of their value when used routinely during the course of the infection. Rest and quiet are the most important principles in the treatment; therefore, if colon irrigations are given at the expense of these two important factors they had best be avoided. A great deal of controversy has arisen in connection with the use of opium in this disease. Personally, I believe that opium, in the form of paregoric or laudanum, should be used if there is great pain and restlessness. No more of it should be used than is necessary to relieve these unpleasant symptoms.

Astringent drugs, such as bismuth, chalk mixture, etc., are of doubtful value and should be used sparingly. This class of drugs, I find, are greatly abused.

I cannot leave the subject of treatment without bringing to your attention the importance of keeping a check on the urine. This is especially important if there is a sudden rise of temperature during convalescence, frequently indicating the presence of pyelitis as a complication.

Stimulation frequently becomes necessary and this can be done with whiskey, caffeine-sodium benzoate, camphor, etc.

Allow me to repeat that fluids in abundance are necessary for the welfare of the patient and if vomiting makes it impossible to give sufficient water by mouth some other method must be used.

In conclusion, I would like to emphasize the following points:

1. Encourage breast feeding.
2. Boil all milk.
3. Pay strict attention to all the common rules of hygiene in infancy.
4. Treat the patient and the acute infection and not the symptoms of diarrhea.
5. Give enough nourishment to support life. A certain percentage of cases will die from infection, but see to it that none die of starvation.
6. Let your treatment be supportive and not meddlesome.

INCIDENCE OF MENTAL AND NERVOUS MANIFESTATIONS IN INTERNAL MEDICINE*

REVIEW OF THREE HUNDRED CASES

By
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During the past two decades those who have taught and endeavored to practice scientific medicine have placed a great deal of emphasis on technical procedure. The human body was visioned as a complicated sort of laboratory. Human life and living appeared to many in terms of a biochemical equation; and the practice of medicine evolved itself into discovering the aberrations of this machine and applying appropriate biologic and chemotherapeutic measures. During the past few years, however, we have begun to realize, or rather re-appreciate, the fact more and more that, beyond the purely physical ills to which mortal flesh is heir, there is the tremendously important psychic set-up of the individual. Much discussion has appeared in contemporary literature, both professional and lay, concerning the psychotic element in dis-

ease and the best approach to its management, until complexes of various kinds are common in lay terminology. Many surveys have been initiated to obtain and evaluate the factual data bearing on this problem, the latest, with which I am familiar, being conducted by the "National Committee for Mental Hygiene".

The statistics which I am about to present are based on 300 cases from my own practice, practically all of whom have received exhaustive diagnostic study. They have been tabulated according to the classifications suggested by this committee as to whether the etiology of their symptoms was

1. Purely physical, that is, without unusual or exaggerated mental or emotional factors;

2. Chiefly physical—if the condition was a physical one accompanied by mental or emotional factors of a secondary or subsidiary nature, which might be expected to disappear entirely with the correction of the physical condition;

3. Physical, complicated by mental—cases in which the physical condition was clearly aggravated by mental and emotional factors, and in which the success of treatment depends to a greater or lesser degree to the extent to which these mental and emotional influences may be alleviated;

4. Chiefly mental—if the condition is a mental one, accompanied by physical factors of a secondary or subsidiary nature; or

5. Purely mental—the psychoses, psychoneuroses and other personal and situation problems.

Since these cases are drawn about equally from rural communities and small towns and cities in North Alabama, they should present a fairly accurate cross section of what is transpiring in a medical way in our State. In presenting these figures I am willing to admit that they are subject to some shading due to the elements of personal bias and individualization of judgment, but on the whole I believe that they will be found to agree in a general way with the average run of office and hospital cases. The 300 cases were fairly well divided between the sexes, since there were 126 male and 174 female.

The purely physical were 137 or 45%.

The chiefly physical were 68 or 22.3%.

*Read to the Association in annual session, Montgomery, April 19, 1933.

The physical, complicated by mental, were 44 or 14.4%.

The chiefly mental were 49 or 16.1%.

The purely mental were 7 or 0.2%.

To recapitulate, then, slightly over one-half, or 55%, of cases who came in for study had definite recognizable mental and emotional factors of varying degrees of severity which had to be reckoned with, while 30.7% presented psychic factors, which constituted a major problem in their management.

From the standpoint of sex, the grouping was as follows:

Male

Purely physical 54.5%.

Chiefly physical 21%.

Physical, complicated by mental, 10%.

Chiefly mental 11%.

Purely mental 4%.

Female

Purely physical 40%.

Chiefly physical 23%.

Physical, complicated by mental, 11%.

Chiefly mental 11½%.

Purely mental 5%.

The close similarity of these two groups would seem to indicate that the stigma of nervousness and weakness placed upon the opposite sex by we superior males may not be an altogether exclusive attribute.

In a special group of 129 cases with gastro-intestinal complaints predominating, purely physical were 27.1%, chiefly physical 21.7%; physical, complicated by mental, 18.5%; chiefly mental 29.8%, and purely mental 2.5%. Thus, 72.5% of patients with gastro-intestinal symptoms had mental and nervous complications, while 50.8% exhibited psychic factors of prime importance.

Now the main interest in these figures, and the reason I bring them to you, is that they appear to face us with a real problem, a problem that can be best solved by the general practitioner, the family doctor, who sees these people first and knows them best. I realize that the above incidence may be higher than that experienced by the general practitioner since a great many of these patients were referred to our clinic by doctors because they were persistent

and perhaps troublesome. I believe that the average practitioner gets more real pleasure out of sending a nervous patient off to a consultant than any other type which he refers. At the same time the above quoted statistics would seem to indicate that a very large proportion of the cases seen by the average practitioner from day to day deserve, even demand, recognition of important psychic factors which must be met if the patient is to recover fully. There is nothing strange about this fact, especially in the turbulence of our modern age. As Samuel Butler has said, "All our lives long, every day and every hour, we are engaged in the process of accommodating our changed and unchanged selves to changed and unchanged surroundings; living in fact is nothing else than this process of accommodation—when we fail in it a little we are stupid, when we fail flagrantly we are mad, when we suspend it temporarily we sleep, when we give up the attempt altogether we die." If you will pardon a diversion to the classics, we are reminded that Shakespeare was well aware of the psychic factor in disease when he had Othello say, "The thought whereof doth, like a poisonous mineral gnaw my inwards," and in Henry the VI, "I feel such sharp dissension in my breast, such fierce alarms, both of hope and fear, as I am sick with working of my thoughts."

And so it is, that poisonous thoughts and fierce alarms of hope and fear, precipitated upon the fertile ground of a sensitive, poorly adjusted nervous system, are responsible for a great deal of woe and illness that medicine cannot cure. One cannot but feel that functional troubles, most of which are psychogenic, have been sadly neglected in our medical teaching. Yearly more students are graduated from our medical colleges with detailed information concerning rare diseases, which they will seldom encounter, but woefully unprepared to deal with the functional troubles which they will see many times daily in the routine of practice. In other words, they are taught much of the science, but little, if anything, of the art of medicine. There are many health agencies that look after the teeth, tonsils, and purely physical welfare of our children, but little attention is given to the mental and emotional adjustment of our youth at

the most critical and susceptible time of life. So from the cradle to the grave the nervous, sensitive individual, who is finding the shifting scenes of life too difficult to become adjusted to, wanders around in a sort of "no man's land" of misunderstanding and contempt, and too often left to quacks and queer religions. The profession as a whole needs to assume a different attitude toward this phase of practice. Not alone the doctor must know but he must make the lay public realize that these people are sick and really suffer more truly than many with gross organic lesions. They should not be subjected to the taunt of "neuro" and treated as if they were wilfully misbehaving, for their symptoms are for the moment as far beyond their control as the fever of typhoid. The fact is, I have often expressed the belief that refinements of investigation into cell structure and cell chemistry may some day demonstrate actual structural change in the nervous system to explain the suffering that these pitiable individuals endure.

It is a rather confusing experience to have a sturdy farmer who has never been sick in his life come in beset by many phobias and with his nerves shot to pieces. The idea has been advanced that in many cases influenzal infections have damaged the nervous system and caused personality changes, aggravated examples of which are seen as the tragic sequelae of epidemic encephalitis. This coincides somewhat with the recent work of Cannon, who has shown that there are centers for the emotions in the midbrain which are ordinarily held in check by the cortex and it is thought that loss of cerebral control over the centers in the midbrain and cord probably causes much of the hypersensitiveness of nervous men and women. Many of the psychogenic troubles probably take their effect through the action of the sympathetic nervous system on the vascular supply of the organs. As one author has strikingly expressed the idea that "just as sensitive persons blanch and blush externally so they blanch and blush internally". This probably accounts for the fact demonstrated by many investigators that emotional disturbances can cause atony, reverse peristalsis, and secretory inactivity in the gastro-intestinal tract.

Time does not permit of a lengthy discussion of treatment. Suffice it to say that every nervous patient should have an exhaustive diagnostic survey of both physical and psychic make-up, which should satisfy both doctor and patient that there is no serious organic trouble, and at the same time give the medical attendant an insight into the basis of the emotional difficulties. Only upon this basis can the proper reassurance be given and a plan for management predicated. It is advisable, in fact quite necessary, to give some sedatives at first to give the harassed patient mental and physical rest so that he may have a chance to recover his equilibrium and face the problems of adjustment. The best of these are, in my opinion, the phenobarbital group, which are, by the way, quite harmless if given properly. They may be used over a rather extended period, but of course should be discontinued as soon as the proper mental poise can be established. They, by all means, should not delay or take the place of the necessary efforts at making whatever psychic adjustments are inevitable. Like the diabetic cure, the treatment of the nervous patient is primarily a re-education, a changing of the whole life of the individual, which requires much time, infinite patience, and most sincere and sympathetic understanding. As Lauren Smith of Philadelphia has well said, "the individual is really an integrated whole, consisting of mental and physical aspects, each dependent upon the other and influencing each other most profoundly. The effective prescription given for the best interests of the individual and patient should in the ideal sense contain therapeutic elements that will act as a specific for the mental side as well as for the physical".

It is my profound belief that if this class of practice is approached in this spirit, and with this ideal, we shall see many more of that individual who contributes to the profession its highest justification and satisfaction—the grateful patient.

Silicosis.—Silicosis is a progressive disease, slowly acquired over a long period of exposure and ranging from little or no pulmonary disturbance and no impairment of industrial capacity to complete lung dysfunction, permanent invalidity and even death.—*Journal, Missouri State Medical Association, August 1933.*

CONGENITAL HYPERTROPHIC PYLORIC STENOSIS*

By

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Most clinicians at the present time agree that in every case of hypertrophic pyloric stenosis there is in addition to the hypertrophy a certain degree of spasm. There are some, however, who are of the opinion that the hypertrophy is always secondary to a pre-existing spastic state. I am not in accord with this theory. On the contrary it is my opinion that hypertrophic stenosis is a clinical entity, though I do believe that it is always associated with more or less spasm. We have seen cases of spastic disease of the pylorus terminating fatally that showed no hypertrophy or tumor formation. In adults suffering over a long period of time with pylorospasm there has been no resulting hypertrophy. I therefore feel that the tumor formation is present at birth but, due to the continued spasm, it increases in size and, with the edema and swelling of the gastric mucosa, finally becomes complete. The obstruction is also made more complete by invagination of the congested gastric mucosa into the canal.

As to the etiology of hypertrophic pyloric stenosis and gastro-entero-spasm in infancy, there are several theories that we might mention. Most pediatricians are of the opinion that the chief cause of the spasm is an imbalance of the autonomic nervous system. In addition to this we must consider thymus disorders, calcium deficiency, and allergy. Aldrich and Marine think that the symptoms in pyloric stenosis might occur as the result of a suprarenal impairment.

The early diagnosis of an operative lesion and the promptness of surgical intervention is necessary at all ages, but in infants it is more necessary than at any other age. The treatment of congenital hypertrophic pyloric stenosis is surgical in all cases in which the narrowing exists to such a degree that the baby, though properly fed and cared for, cannot maintain his nutrition and strength. As soon as this condition has been demonstrated no time should be lost in waiting, for delay only lessens the chances

of life, which are good if operation is performed before wasting and weakness become extreme. The tissues should first be filled with saline and glucose and then the operation performed.

When these cases are seen early I think it is advisable to try to give the baby the opportunity of medical care, but, if this fails, as stated above, the operation should be performed before extreme wasting and dehydration are reached. The medical care may be outlined briefly as follows: atropine, in an attempt to control the spasm; thick cereal feedings; phenobarbital to control the general irritability, and x-ray treatment over the upper thorax.

Orville Barbour has reported a rather extensive series of cases of congenital pyloric obstruction treated with x-ray exposure of the upper thorax. However, I feel that his cases were possibly not true hypertrophic stenosis, but most likely spasm with very little hypertrophy and tumor formation. My colleagues in Birmingham have had very little results with the x-ray, and then only in mild cases in which there was probably little or no hypertrophy. In none of the cases that I have operated on personally were there any results whatsoever from the medical treatment. However, Barbour's results were so gratifying that his plan of treatment is worthy of a fair trial.

Most pediatricians will agree with Sauer that the success of the treatment of this disease depends primarily on "(1) the condition of the patient at the time treatment is started; (2) on the facilities for the proper nursing care and isolation of the patient; (3) the degree of obstruction (hypertrophy and spasm) at the pylorus, and (4) the skill of the physician or surgeon." There is less controversy now than formerly between the advocates of medical and surgical treatment, as it is generally conceded that medical treatment will relieve certain cases. The question always to decide is, Which is the safer or more effective procedure?

That childhood surgery is difficult and hazardous goes without saying. The diagnoses are difficult and there is, in many instances, little or no history to be obtained though it is most important to be as careful and painstaking as possible to obtain from mother or nurse an accurate account of the

*Read to the Association in annual session, Montgomery, April 20, 1933.

illness. In view of the fact that these little patients in spoken words tell us nothing, our examinations must be most complete. Happy is the pediatric surgeon who has at his disposal a skilled pediatrician. In no branch of medicine is closer cooperation desired between medical man and surgeon than in the case of these little patients. In the management of a baby with pyloric stenosis the surgeon needs the pediatrician every moment. What success I have had with these young patients I owe to the skill of my colleagues, their prompt diagnoses, their close observation and their skilful care.

In a careful analysis of twenty-seven cases (see Table 1) at the Children's Hospital in Birmingham, there were three deaths in infants not operated upon that were obviously past surgical relief. There were twenty-four operative cases with five deaths. Of the five operative deaths, three of them were due to starvation and post-operative shock in babies that were in very poor condition, markedly emaciated and dehydrated and with symptoms lasting five weeks or longer. There was one death from general peritonitis following a perforation of the mucosa. There was another death from intestinal obstruction which developed ten days after the operation, at which

time the mucosa was perforated and, though it was sutured, sufficient irritation resulted to later produce an obstruction. In the fatal cases the duration of symptoms averaged from five to nine weeks, while in the recovery cases the duration of symptoms was from one to ten weeks with a much less average length of time. In six of the cases perforation of the duodenal mucosa occurred. It was recognized in one case which terminated fatally; in the other five cases the mucosa was sutured. One of these died, as stated above, from a secondary obstruction; the other four cases recovered without any difficulty. Therefore, the principal dangers of the operation are (1) inability of the dehydrated baby to withstand the procedure, and (2) the danger of perforation of the duodenal mucosa.

Goldblume and Spence reviewed 163 Rammstedt operations and remarked—"the operation per se is perhaps the least important factor in the mortality. The condition of the baby at the time of the operation is certainly the most important factor." Their conclusions follow:

1. When symptoms have lasted less than four weeks the mortality is only one-third as great as when they have lasted four weeks or longer.

TABLE 1

A STUDY OF TWENTY-SEVEN CASES OF CONGENITAL HYPERTROPHIC PYLORIC STENOSIS OBSERVED IN THE CHILDREN'S HOSPITAL, BIRMINGHAM, ALABAMA

Case No.	Age at Outset	Duration of Symptoms	Loss of Weight	Age at Operation	Result	Perforation of Mucosa	Condition Before Operation	Cause of Death
1	4 Weeks	5 Weeks	Emaciated	9 Weeks	Died	No	Very Poor	Starvation Postoperative Shock
2	3 Weeks	5 Weeks	Emaciated	8 Weeks	Died	No	Poor	Starvation Postoperative Shock
3	4 Weeks	6 Weeks	Yes	10 Weeks	Died	No	Poor	Starvation Postoperative Shock
4	Birth	4 Weeks	Yes	6 Weeks	Died	Yes	Fair	Peritonitis
5	2 Weeks	4 Weeks	Slight	6 Weeks	Died	Yes	Fairly Good	Intestinal Obstruction
6	3 Weeks	9 Weeks	Emaciated	---	Died	No Operation	---	Starvation
7	6 Weeks	2 Weeks	Gain	---	Died	No Operation	---	Aspiration of Vomitus
8	6 Weeks	6 Weeks	Gain	---	Died	No Operation	---	Bronchial Pneumonia
9	5 Weeks	3 Weeks	None	8 Weeks	Recovery	No	Good	---
10	3 Weeks	2 Weeks	Slight	5 Weeks	Improved	Yes	Fair	---
11	4 Weeks	7 Weeks	None	11 Weeks	Recovery	Yes	Fair	---
12	2 Weeks	2 Weeks	Slight	4 Weeks	Recovery	No	Good	---
13	1 Week	2 Weeks	2 Pounds	3 Weeks	Recovery	Yes	Fair	---
14	3 Weeks	1 Week	Slight	4 Weeks	Recovery	No	Good	---
15	3 Weeks	1 Week	Yes	4 Weeks	Recovery	No	Good	---
16	2 Weeks	1 Week	Slight	3 Weeks	Recovery	No	Good	---
17	25 Days	3 Days	None	4 Weeks	Recovery	Yes	Good	---
18	4 Weeks	10 Weeks	Marked	14 Weeks	Recovery	No	Poor	---
19	3 Weeks	3 Weeks	Marked	6 Weeks	Recovery	No	Good	---
20	1 Week	3 Weeks	Slight	4 Weeks	Recovery	No	Good	---
21	1 Week	1 Week	None	2 Weeks	Recovery	No	Good	---
22	2 Weeks	1 Week	Slight	3 Weeks	Recovery	No	Good	---
23	2 Weeks	3 Weeks	Slight	5 Weeks	Recovery	No	Fair	---
24	6 Weeks	4 Weeks	Slight	10 Weeks	Recovery	No	Fair	---
25	3 Weeks	3 Weeks	Slight	6 Weeks	Recovery	No	Fair	---
26	3 Weeks	5 Weeks	Marked	8 Weeks	Recovery	No	Poor	---
27	4 Weeks	5 Weeks	Marked	6 Weeks	Recovery	No	Fair	---

Summary: 24 operative cases; 5 deaths following operation; 3 deaths without operation.

2. The mortality in artificially fed babies is three times higher than in breast-fed babies.
3. In infants weighing less than seven pounds, the mortality was $3\frac{1}{2}$ times as great as those who weighed more than seven pounds.
4. The mortality increases in direct proportion to the amount of weight lost previous to operation.
5. The mortality for breast-fed infants who had vomited less than four weeks and who had lost less than 20% of their best weight is almost nil. The fatalities which occur are due to accidents usually avoidable, when the operation is done by a skilful surgeon.

In a way, babies and children are most kind to the surgeon. If you give them half a chance they will get well. Though infants stand shock, hemorrhage, and surgical infections less ably than older children and young adults, they are more responsive to treatment and make a quicker come-back when the disease is under control. They, however, stand certain operative procedures better than adults do.

In operations upon children, particularly infants, the surgeon must use all the skill at his command—early diagnosis, prompt intervention, adequate preoperative preparation, saline and glucose for starved tissues, transfusion for lack of blood, as near a shockless operation as possible, small delicate instruments for small wounds in little bodies, intelligent postoperative care, saline and glucose and blood transfusion when necessary, careful feeding and pediatric supervision, and careful nursing by nurses skilled and trained in the care of the child.

Operation: (Anesthesia)—Though I have had several cases that did very nicely under local anesthesia, I am firmly convinced that ether is the anesthesia of choice. Even though one might do the operation painlessly under local anesthesia, evisceration is very apt to occur as a result of crying or vomiting; and the manipulation necessary to replace the eviscerated bowel will produce considerable shock and damage the baby much more than an ether anesthesia. It has been my custom, in addition to the ether, to infiltrate the abdominal

wall so that, if necessary to discontinue the ether, the wound can be closed painlessly.

The incision that I have used in most cases begins high up in the mid-line just below the ensiform cartilage and extends down obliquely to the right. This high incision places you above most of the viscera, which is, I think a distinct advantage, and gives one better access to the pylorus than the classical right rectus incision. It is also easier to close, as the intestines are less apt to eviscerate through the wound during the act of closure. I have decided however, in the future, to give the Kocher incision a fair trial, as it seems to me that it would prove to be the best. The one that I have been using I might say is half way between a mid-line and a Kocher incision. With the abdomen opened the pyloric tumor is grasped between the fingers of the left hand and drawn into the wound, the assistant at the same time retracting the stomach toward the left side. The Rammstedt procedure is then performed by carefully incising down to the mucosa and spreading the margins apart, thus allowing the mucosa to bulge outward. The incision is made about one-third of the way down from the superior part of the tumor in the avascular zone. The cause of perforation is usually due to carrying the incision too far down toward the duodenal end.

In practically all cases where the mucosa is perforated the perforation takes place at the duodenal end of the tumor, where, as you now, it is very thin. It really is not necessary to carry the incision quite so far down, but I think it most essential that the incision be carried well up on the gastric side of the tumor to allow the gastric mucosa to bulge outward. The spasm of the stomach forces the redundant mucosa down into the canal, thus obliterating it. The cases showing the least postoperative vomiting were the ones in which I carried the incision well up on to the stomach. This will prevent the mucosa from invaginating into the lumen. I, myself, have had to suture one perforation and, when the opening was closed, the incision did not carry quite down to the duodenal end, and did not result in a stenosis. In case perforation does occur, it should be carefully sutured with fine black silk and should be covered over with an omental flap. After controll-

ing all bleeding it has been my custom to suture the omentum over the operative field.

Postoperative Care: The babies are given liberal quantities of glucose in saline under the skin and blood transfusion when necessary. Feeding, according to the Downs Method, is instituted within a few hours, and as early as possible the baby is put on the regular feeding for that age.

SUMMARY

Congenital hypertrophic stenosis and gastro-entero-spasm are most likely due to an imbalance of the autonomic nervous system. Spasm plays an important role in hypertrophic stenosis but I believe that the latter condition is a clinical entity. Medical treatment, directed toward the relief of spasm by the use of atropine, phenobarbital, thick feedings, and x-ray exposure should be given a trial.

All cases that resist medical treatment should be operated upon before dehydration and wasting take place to a degree that operation becomes a decided risk. The operative procedure of Rammstedt should be performed under ether anesthesia with the utmost gentleness and with particular care to avoid perforation of the duodenal mucosa.

The cases reported above were all from the records of the Children's Hospital in Birmingham, and I wish to thank Dr. J. M. Mason and Dr. W. E. Drennen for reporting their cases along with mine. Private cases in other hospitals are not included in this series.

Syphilis in Children.—There can be no doubt that the easiest, surest and best manner of managing hereditary syphilis is, when possible, by the prophylactic treatment of the parent. It has been abundantly established that adequate anti-syphilitic treatment of the mother during pregnancy will result in the birth of a non-syphilitic offspring; and, there seems to be agreement, too, on the proposition that when the mother received treatment during pregnancy, even though this be inadequate to achieve a cure, the resulting syphilitic offspring is more readily amenable to successful treatment. Looking beyond the cure of the individual case, and visualizing the attack against the disease in general, it is recognized that the mother's treatment must be continued until complete cure is effected, and also that the father must submit to treatment until completely cured; otherwise subsequent pregnancies will result in the birth of potentially syphilitic offspring.—*Signorelli, New Orleans M. & S. J., September 1933.*

THE TREATMENT OF HABIT SPASMS BY PSYCHOTHERAPY*

By
C. HILTON RICE, M. D.
Montgomery, Ala.

In 1932 I began experimenting with the treatment of several stammerers by psychotherapeutic methods. The results obtained led to the treatment of various kinds of habit spasms in the adult. As these afflictions are not only disfiguring and annoying but oftentimes impose a serious handicap in the competition of life, any method of treatment that brings prompt relief should be of general interest.

Trained, as all physicians are, in the physical treatment of the body, the case reports in this paper must seem outside the ken of common experience. The reason of this is clear: the use of psychotherapy involves a potent therapeutic agent that cannot be weighed, measured or formulated for general use, something that cannot be passed on for testing and confirmation by all physicians. Though there are various schools of psychotherapy that exploit particular techniques, the great majority of physicians are ignorant both of its possibilities and uses.

Fellow physicians have asked me the frank question: "Just what did you say to that patient?", as though the potency of suggestion were in the spoken words. In truth, I doubt if any psychotherapist has any clear understanding of the subtleties involved in psychic healing. There is a great deal of descriptive writing but the nature of mind itself is unknown, and psychologists themselves are by no means agreed on theories, techniques or methods. Only the *fact* of psychic healing is established. Since successful therapists, using different techniques, may obtain much the same results, it would appear that the potency of psychic power to bring about a cure must be resident in the operator himself. I am not prepared to argue this point, for I do not believe it matters much what an operator believes, except that he believes in himself.

My first experiments were begun with a belief that various habit spasms should

*Read at the Homecoming Meeting of the Bullock County Medical Society, Union Springs, August 9, 1933.

yield to suggestion, but to my surprise, in several cases, there was a cessation of the muscle spasm before any planned suggestion was made. Undoubtedly something I said went over as a suggestion, but I cannot go back and record the words spoken, for one's manner of approach must vary according to the personality of the patient. In short, I have used no memorized formula and have developed no fixed technique.

In no case have I ever attempted hypnosis, nor has there been any elaborate history taking or psychoanalysis in search of a cause. To one working on the theory, that in the revelation of the cause lies the cure, such tedious, painstaking search may be a rational procedure, but to know, or to think I know, the cause, has been of no advantage to me.

As I see it, the relation between the operator and patient is one involving many subtleties, and one must be guided in what is said by quick insight into the patient's responses. Conscious attempts to "impress the patient" is bad psychology at the outset and leads to too much talking and the consequent dangers of counter-suggestions. It is man's nature to believe in a higher power that rules over life, and whether the therapist accepts it or not his patient regards his psychic power as spiritual in its essence. Since neither knows the nature of the influence at work, it is wise for the operator, when a sudden cure seems to be effected, to accept it with matter of course calm and not endanger the result with attempted explanation, vain posing, or even rejoicing with the patient.

The psychotherapist practices by purely empirical methods and the only positive fact he has established is that many *functional* disorders are curable by psychic means. In no case, however, should he attempt psychic treatment unless he is aware of the state of the patient's physical health and has assured himself there is no organic cause present.

I report the following cases as further evidence that habit spasms are curable by psychotherapy.

Case 1. A big man, aged 50, highly intelligent and well informed. Since age of 15 had been afflicted with terrific spasms of muscles of right side of face, neck and shoulder. When animated or excited,

spasms would recur several times a minute. Sitting in a parked automobile with him I noticed that the contractions were violent enough to rock the car.

During past years he had consulted specialists in three eastern cities. All had told him he had a habit spasm that evidently persisted from a chorea attack in childhood; that it probably would continue throughout his life but without harm to himself. Having treated his children, and knowing him intimately, I ventured to suggest to him that his affliction should be curable by psychological methods. An hour later he was in my office. During a brief explanation of the effect of mind over the body functions, I observed that the spasm had ceased, and after ten minutes I called his attention to the fact that all twitching was gone. He smiled and remarked, "I know it. I feel that I have perfect control."

More than a year has passed and there has been no recurrence of the spasm, though from time to time some friend of his will report that he has noticed a tendency to "move" head or shoulder. The patient himself states that he feels the inclination at times when speaking, but "I can always control it when I make the effort."

I have been with him, in a social way, as long as three hours at the time but have never observed the old spasm. I have noticed an occasional movement of head or shoulder, but it is no more than a gesture of emphasis, a mere suggestion of the old manner of speech so long associated with the violent jerking of head and shoulder.

As would be expected, the patient has experienced a most pleasant relief from the physical weariness that formerly resulted from the energy waste involved in the muscle spasms.

Case 2. A middle aged physician, brother of case 1, who lives in a distant city. Having heard of my results with his brother, he wrote me that he had been troubled with an annoying facial tic for twenty years and wanted information as to the method used in treatment. I explained in reply that the method was purely psychological and suggested that he come to see me.

A few weeks later he came for treatment. After some moments of conversation, a slight twitching of the right side of

face stopped completely. On seeing me the next day he remarked that I had never seen the real tic and that he would have to demonstrate it. "The thing stopped when I came in your office and I have not had it since. I feel the impulse to twitch but have perfect control."

Ten days after his return home he wrote that he (and his friends who watched him) considered himself ninety-five per cent cured. "Of course," he added, "it is a great relief to me to know that I am overcoming this annoying and disfiguring tic but with it goes many other annoying nervous manifestations that I scarcely realized before were present. The greatest relief of all is the sense of well-being that is present at the end of the day, that I haven't experienced before for many years."

The next two cases were referred to me by Dr. Chas. Thigpen, who found no pathology and recognized the mental element involved.

Case 3. Young man, aged 21, a shy, reticent youth, who for the past year had lost almost complete use of his voice. Every effort to speak resulted in his voice dying away in a croupy whisper. Only with the greatest difficulty could he complete even a short sentence. In fact, it was distressing to watch his forced attempts at speech and difficult to believe there was no serious physical cause present.

His mother stated that she had taken him to a specialist in an eastern city last summer, and the doctor had told them it was a nervous affection of some sort for which he had no cure. In desperation the boy had written to various advertising "specialists" on the radio and in the newspapers.

After assuring him that his whole trouble was in his mental mechanism and not his larynx, and that his voice could be brought back under control, I had him say the alphabet, count to one hundred, and repeat sentences after me. With each exercise his voice came out stronger and clearer.

He was to return in one week to continue under treatment but I did not see him for three weeks, when he reported very much improved. Owing to his natural shyness it was difficult to engage him in conversation, so I had him read aloud to me across an intervening room and call out words and sentences.

After four days of such drills he was discharged much improved, his mother agreeing that he had recovered his natural voice.

Case 4. Miss X. Intelligent young woman, teacher of freshman English in a college. For past year has had increasing trouble with voice control. Cannot carry on conversation or speak in class room without having her voice "break" and fade to a whisper. Had prepared to resign her position owing to her embarrassing affliction.

On hearing her talk one had to agree that her voice seemed hopelessly impaired, and her strained, croupy whisper was too trying on her listeners for her ever to hold any position that required speech with others.

After a brief explanation of the nature of her case, she was able to repeat the alphabet and count to one hundred with scarcely a break in her voice. In fact, her recovery was immediate as she carried on a conversation for fifteen minutes in what she happily assured me was almost her natural voice.

A week later I saw her again and she reported she had had no trouble in teaching her class. "Once or twice my voice broke slightly, but I just stopped a moment, then went right on talking." During a half hour's conversation I could detect no suggestion of her former trouble.

Abortions.—From a clinical standpoint miscarriages may be classified as spontaneous or induced. Those that are induced may be therapeutic or criminal. From a standpoint of treatment they may be threatened, inevitable, incomplete or complete.

As to diagnosis of a threatened miscarriage, the factors that would lead us to suspect the likelihood of abortion are, first, bleeding; and second, cramps. Many patients bleed at irregular intervals during pregnancy, but carry the fetus to term. But bleeding in the early months of pregnancy is always a rather serious complication and should put us on our guard. Especially is this true when it is associated with cramps. The character of bleeding may or may not be of help in determining whether or not miscarriage is threatened. If the fetus has died there is usually a discharge of dark brown or grumous material, usually having considerable odor and persistence. This may go on for many days before the uterus empties itself. The cervix in this condition is usually not dilated; neither has it become shortened.—*McConne'll, South. M. J., August 1933.*

LINGUAL THYROIDS

REPORT OF CASE

By
R. C. HILL, M. D.
York, Ala.

The types of thyroid in relation to their embryologic development are, according to Lahey,¹ (1) those that remain and develop at the point of fetal origin, the foramen cecum, and are clinically known as lingual thyroids; (2) those that develop and remain localized in the structure of the tongue, called intralingual goiters; (3) those developing in front of the larynx, the prelaryngeal types; (4) those that develop and assume the normal position anterior and lateral to the upper rings of the trachea, known as pretracheal; and (5) those that develop in the superior mediastinum behind the sternum, commonly called retrosternal.

Lahey² emphasizes that the thyroid is generally considered to take origin from a single anlage, the site of which is marked by the foramen cecum. Failure of the gland to descend normally causes aberrant or accessory thyroids which are in the median line. The lateral aberrant thyroids are caused by segments of thyroid tissue becoming detached and developing laterally. These are usually pseudo-accessory or allied-accessory and only rarely true accessory goiters.

Lingual goiters are the most rare. There are something like a hundred cases in the literature, and only one case of carcinoma of lingual thyroid³ has been reported. A few have been found early in life, and some in adults; but most are observed during adolescence. This is usually accounted for by the fact that examinations are made more often and more carefully at this age. Lingual goiters may not cause any symptoms. New⁴ reported ten cases at the Mayo Clinic, none of them with sufficient symptoms to advise removal. However, if they have grown sufficiently large, they interfere with the motility of the tongue causing difficulty in swallowing and breathing, and speech defects. There also may be symptoms associated with the state of activity of the gland. The size of the gland may change during menstruation or gestation as one in the normal position often does.

Lingual goiters are located in the median line on the posterior part of the tongue and appear as a dark red mass more or less raised above the surface and usually with large superficial veins. They may be nodular and extend laterally toward the margin of the tongue. A lingual tonsil or abnormally placed tonsil tissue must be considered in a diagnosis, as must other benign and malignant tumors in this region, including angioma. The position of lingual goiter in relation to the foramen cecum is characteristic.

Surgical treatment is not to be undertaken unless there are disturbing symptoms of pressure or obstruction, because of the very great likelihood of producing myxedema. From the embryologic development the lingual thyroid is probably the only thyroid tissue present in such a case. This course is strongly advocated by all who have written on the subject. Many surgeons advise an exploratory operation to locate, if possible, any thyroid tissue in the normal position.⁴ The least amount of tissue that will relieve the symptoms is removed. The oral route is considered best.

Under general anesthesia a suture is placed through the tongue on each side to pull it forward and so make the tumor accessible. A wedge-shaped piece of the thyroid tissue is removed, controlling the bleeding with hemostats as the gland is cut. The defect is closed with interrupted sutures. In some cases the gland has been incapsulated and shelled out with very little bleeding. It may be advisable to perform a tracheotomy as a preliminary measure in vascular growths. Owens,⁵ in his case, after being unable to deliver the gland sufficiently in this way, approached it through the left side of the throat, making an incision from the tip of the mastoid process to beyond the median line anteriorly, separating the muscles by blunt dissection. He claims an adequate exposure and ease of operation that is not attainable by the intra-oral route. Ziegelman⁶ quotes St. Clair Thompson⁷ as advising surgical diathermy as a means of removing lingual thyroids. The prognosis after removal depends upon the presence of any other thyroid tissue. Practically all of the patients have developed myxedema after operation, Owen's case being an exception. However,

the operation is to be undertaken if necessary to relieve the obstruction and pressure. The myxedema can be controlled with thyroid extract.

REPORT OF CASE

This patient, a nine year old negro girl, 53 inches tall, weighing 66 pounds, was seen March 3, 1933 complaining of a lump on the tongue.

The mother first noticed this lump on the tongue about three years ago during an attack of sore throat. They observed that the mass is larger when she has sore throat, which occurs every month or so. At such times she has a sensation of choking and will vomit if she eats fast; also during the attacks she wheezes with her breathing. The condition has grown worse during the last year and now she has to eat very slowly and the wheezing is present practically all the time. The child has had no serious illness: influenza in 1918, mumps in 1929.

The mother has a small goiter, and the maternal grandmother has a huge cystic goiter.

Physical examination was essentially negative, except for the throat condition. There is a tumor on the posterior part of the tongue in the median line, but extending more toward the right. It is of a dark red color, lobulated, and has a few veins on the surface. No mass is palpable in the normal position of the thyroid gland. The child has a slight dyspnea. A tentative diagnosis of lingual goiter was made and excision advised because of obstructive symptoms.

The greater part of the tumor was removed under ether anesthesia March 10, 1933. A wedge-shaped piece was removed by cutting between forceps, and taking mattress sutures after each cut. In this way hemorrhage was controlled with little difficulty. The patient was discharged from the hospital in two days and last seen a week after the operation. The wound had apparently healed.

The excised tissue was examined by Dr. John A. Lanford of New Orleans, to whom I wish to express appreciation for his kindness in examining the tissue and for the completeness of his report. He reports that "examination of the piece of tissue from the tongue shows it to be made up of great numbers of alveoli lined with epithelial

cells, some of which are columnar, and others cuboidal, depending upon the amount of secretion within the alveolus. These alveoli are supported by a thin connective tissue stroma containing blood vessels and are secreting a colloid material. Histologically, the new growth is that of thyroid tissue, and I am glad to be able to confirm your diagnosis of an aberrant thyroid. One surface of the tissue is covered with stratified squamous epithelium in which are located lymph follicles and still deeper are noted a number of mucus glands. The thyroid tissue is resting on a stroma made up of connective tissue. I am unable to demonstrate any muscle fibers surrounding this growth."

Lingual goiters probably contain all the thyroid tissue present in such cases and their removal should be undertaken only in the presence of obstructive symptoms.

SUMMARY

A case of lingual thyroid is reported in a negro girl whose mother and maternal grandmother have goiters.

REFERENCES

1. Lahey, Frank H.: Lingual Goiter, Surg. Gynec. Obst. 36: 395, 1923.
2. Lahey, Frank H.: Abnormally Located Goiters. Illinois M. J. 49: 11 (Jan.) 1926.
3. Ashurst, A. P. C. & White, C. Y.: Carcinoma in an Aberrant Thyroid at Base of Tongue. J. A. M. A. 85: 1219 (Oct. 17) 1925.
4. New, Gordon: Congenital Obstruction of the Larynx and Pharynx, J. A. M. A. 81: 363 (Aug. 4) 1923.
5. Owens, Michal J.: Lingual Thyroid, J. Kansas M. Soc. 26: 160 (May) 1926.
6. Ziegelman, E. F.: Lingual Goiter, Arch. Otolaryng. 16: 496 (Oct.) 1932.
7. Thompson, St. Clair: Diseases of the Nose and Throat, Edition 3, London, Cassell & Co. Ltd., 1926, page 449.
8. Ulrich, Henry F.: Lingual Thyroid, Ann. Surg. p. 503 (April) 1932.

Surgical Treatment of Pulmonary Tuberculosis.—Tuberculosis, under favorable conditions, has a tendency to heal. With the proper routine of rest, regular diet, and adequate fresh air many patients have recovered without recourse to any of the more specialized procedures. Collapse therapy, therefore, does not offer a substitute for our time-tried basic treatment, but rather provides supplementary mechanical measures which aid in the healing process.—*Marcy & Decker, Penn. M. J., August 1933.*

MALARIA AS A COMPLICATION*

C. M. FRANKLIN, M. D.
Union Springs, Ala.

Bass says that so far as he knows there is not a single disease the presence of which prevents the presence of malaria. I think we will all agree with him.

Malaria may be a complication of either acute or chronic diseases. I think, in my experience at least, it has complicated chronic diseases much the more frequently. Most of us remember the old diagnosis, "typhomalarial" fever. Of course this was an atypical typhoid, a typhoid complicated with a malarial infection or a malaria, probably of aestivo-autumnal type, of prolonged duration, possibly incorrectly treated in some cases.

The most frequent diseases accompanied by malaria are the diseases most prevalent in the given locality. With us I have seen malaria a complication of typhoid, dysentery, and pneumonia; and among the chronic diseases, syphilis, tuberculosis, hookworm disease, and gastro-intestinal diseases.

The primary disease does not alter the course of the complicating malaria; however, the clinical symptoms are changed. When in the course of any disease there occurs a chill or chilly feeling followed by a sharp rise of temperature followed by a more remittent type of fever, one of the things to be suspected is malaria. At other times a fever that is unduly prolonged may be the only symptom.

The malarial complication may be a new infection or may be a lighting up of a latent infection. After an injury, surgical operation and especially after childbirth, a latent infection is very apt to become active. During pregnancy an acute malaria is frequent and often results in abortion or premature labor.

There is only one way to make the diagnosis and that is by repeated blood examinations. I think that it should be a routine measure to have the blood examined for malaria in every febrile case.

I wish to report three cases:

Case 1. A man, thirty-five, suffering from a slightly active pulmonary tuberculosis. X-ray showed infiltration of apices

*Read at the Homecoming Meeting of the Bullock County Medical Society, Union Springs, August 9, 1933.

of both lungs and small cavity on left side in front beneath fourth rib. Sputum positive for tubercle bacilli for past five years. After exposure to bad weather had chill, temperature rose to 103.5, complained of aching in back and limbs; frontal headache moderately severe. Developed a pain on left side and left upper abdomen, cough became aggravated. A pleuritic rub was heard under base of lung in left axillary line. A diagnosis of a probable acute dry pleurisy was made. However, a chill being unusual in pleurisy and temperature running rather high, a blood examination was made and presence of tertian parasites demonstrated. After thirty grains of quinine for three days temperature dropped to normal. However, after a few days, evening temperature would rise about one degree above normal, morning temperature being subnormal. Cough increased in spite of continuance of quinine in 15 grain daily doses. This case seems to confirm an observation made in the past—that a malarial infection in a tuberculous patient is apt to increase the activity of the tuberculosis.

Case 2. A primipara delivered, labor normal, puerperium normal until fifth day when she had a well marked chill, followed by temperature of 104. No tenderness in lower abdomen, lochia normal, no tenderness in breast. Blood examination showed malarial parasites. Quinine very promptly relieved the situation.

Case 3. A primipara delivered, labor difficult, requiring forceps. On seventh day had chill, followed by temperature of 105. Fever dropped in few hours to normal with profuse sweat. In a few hours had another chill and rise of temperature as before. Lochia normal, no tenderness in lower abdomen, complained of backache. Blood examination normal, catheterized specimen of urine loaded with pus cells, region of right kidney tender on pressure. A diagnosis of acute pyelitis was made and after a rather prolonged illness patient recovered. At no time were there symptoms referable to uterus that were abnormal.

In closing I wish to repeat that in every case, acute or chronic, that shows any abnormality in temperature repeated blood examinations should be made to prove or disprove the presence of malaria, especially in a locality where malaria exists.

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STRAINS OF *TREPONEMA PALLIDUM*

Syphilis may be manifested by symptoms that are predominantly either of nervous or somatic character. From this has arisen the question whether there is a plurality of strains of the *Treponema (spirocheta) pallidum*. The subject is further clouded in that one individual may have a mild infection, while the person to whom the infection is passed will show an entirely different clinical picture. In support of the two theories are many clinical and experimental arguments.

It has been shown that when syphilis attacks a nation that has not previously been ravaged by the disease, nervous lesions are rare. Thom¹ concludes, in contrasting lues among the white and colored races, that the relative infrequency of nervous symptoms among the latter may be due to (a) a difference in the strain of spirochetes, (b) the state of civilization, and (c) the degree of syphilization. As the colored race was in-

fectured by the white, the strain or strains of organisms must be the same.

Recently Leary² has reported a series of two hundred husbands and wives in whom the one partner had neuro-lues and the other showed no evidence of nervous involvement. In all cases the second partner had been infected by the first after marriage. He often discovered cardiovascular lesions and evidence of neuro-lues in the same patient. Certain factors were set forth by him as having a bearing upon the problem. They are: (1) virulence of the strain, (2) local areas of reduced resistance, (3) general disease, (4) trauma, and (5) that clinical study offers only presumptive evidence. Franklin³ reviews the literature and offers in support of the single strain theory a case in which cutaneous, osseous and vascular lesions were co-existent with progressive paralysis.

Levaditi and Marie⁴ base their claims of the multiplicity of strains upon the following findings: (a) there is a difference in the incubation time, neurotropic having the longest; six weeks for the dermatropic and four months for the neurotropic; (b) by the lesion which they cause in the rabbit, chancre in the dermatropic and papular lesions in the neurotropic; (c) histologically the neurotropic has an affinity for epithelial tissue; (d) by the evolution of the papule, slow growth, tardy healing and relapse in the neurotropic form; (e) by the pathogenicity of the organisms, marked virulence for monkeys, apes and man by the dermatropic; negative pathology and cutaneous involvement in the neurotropic variety; and (f) the fact that an animal cured of one variety of treponema is not immune to the other.

Six strains of *Treponema pallidum*, uncontaminated by other spirochetes were tested by Kolmer, Wilkes-Weiss and Ritch.⁵

2. Leary, Paul A.: Syphilis of the Central Nervous System and Cardiovascular System in Husband and Wife, Med. Clin. N. A. 22: 1643, 1928.

3. Franklin, M.: Co-existence of Cutaneous, Osseous, and Vascular Lesions in Progressive Paralysis, Urol & Cutan. Rev. 36: 262 (April) 1932.

4. Levaditi and Marie: Plurality of the Syphilitic Virus, Ann. de l'Inst. Pasteur 37: 189, 1923.

5. Kolmer, J. A., Wilkes-Weiss, D., and Ritch, C. P.: Are There Immunologic Strains of the Spirocheta Pallida? J. Infect. Dis. 38: 378, 1926.

1. Thom, Burton Peter: Strain in Spirochetes, Am. J. Syph. 5: 9, 1921.

In the complement fixation test nothing unusual was noticed when immune sera were examined, one against another; agglutinations reactions on several gave like results. They concluded that the reaction of experimental lues in rabbits depended upon the virulence of the organisms, susceptibility of the host, efficiency of the defensive mechanism and the method of inoculation.

Simon† states, "So you see, Messieurs, by the brief exposure of the clinical arguments it is impossible to induce for or against the hypothesis of the plurality of the syphilitic virus. It must be based on experimental evidence." And further it cannot be proved by rabbit experimentation alone. Thus the matter stands, still unproven after years of research, with the burden of proof upon the proponents of the idea of plural strains.

M. E. S.

EVALUATION OF HEART MURMURS

About one hundred years ago the stethoscope was invented and auscultation of the heart became a routine procedure. Many murmurs and bruits were heard and described and, for three-quarters of a century, any cardiac sound that deviated even slightly from the normal was labelled "organic heart disease" and, quite often, a gloomy prognosis attached.

About twenty years ago some clinicians began to challenge this view-point and a new school arose, the adherents of which asserted that murmurs in general, and systolic murmurs in particular, were inclined to be viewed with an exaggerated degree of alarm. Cabot and others stressed the importance of "non-valvular heart disease", and arterial hypertension began to receive serious study and consideration. That doughty and original observer, Sir James Mackenzie, joined in the fray and led the attack upon those who still taught that a murmur per se was of prime importance in every case, regardless of symptoms and of other physical signs. The following quotation from his book¹ is quite typical: "Mur-

murs were assumed to be of serious significance before their real nature was understood . . . With that injudicious enthusiasm which at all times has heralded a new method of observation, fabulous qualities were at first attributed to the stethoscope. People were found to have murmurs before their death; . . . the statement went forth with all the weight of the highest authorities that these signs betokened grievous heart trouble. Today, . . . the whole profession suffers from this untrustworthy observation. Perfectly healthy men are, today, being rejected for the Army, or invalidated out of it, because a murmur has been detected in their hearts. Others, who present themselves for life insurance, are rejected or made to pay a higher premium for the same reason, while innumerable individuals are subjected to prolonged treatment and great restrictions in their mode of life because these early superficial observations have misled the profession." In expressing his opinion of "Statistical Methods in Prognosis," he says: "If I were to note the age of death in a great number of people with soft corns and were then to lay it down that the average period of life in these persons represented the probable duration of life in all people with soft corns, the absurdity of this method of reasoning would be perceived at once. Why is it absurd? Because a soft corn is not a fatal disease. Now the vast majority of signs on which the insurance examiner bases his statistics are as free from risk to life as are soft corns, so that when the examiner takes a murmur as a criterion he is taking a sign the cause of which may have no bearing whatever on the individual's health."

While the profession at large has been following these new teachings and has been taking a much more lenient view of heart murmurs than formerly, it is significant that life insurance companies have continued to look askance at any and all murmurs, even those that are definitely systolic. McCrudden² has shown that there is a definite decrease in life expectancy in individuals who have no signs of heart disease other than an apical systolic murmur.

†. Simon, C.: *Plurality of the Syphilitic Virus*, Bull. Med. Paris 41: 876 (July 27) 1927.

1. Mackenzie, Sir James: *Principles of Diagnosis and Treatment in Heart Affections*. London 1923. Henry Frowde and Hodder and Stoughton. pp. 58 and 176.

2. McCrudden, F. H.: *Heart Murmurs and Insurance*, New England J. Med. cciv: 598-600, 1931.

Recently, Freeman and Levine³ attempted to shed further light upon this subject and made a study of one thousand consecutive "non-cardiac" cases. As a result of their investigations these authors believe that most present-day physicians are inclined to regard systolic murmurs too lightly. They have devised a detailed and comprehensive system of grading murmurs according to severity, ranging from grade one for the least significant to grade six for those that are extremely serious. They further urge that every patient with even a faint systolic murmur be most carefully examined and that all possible causes such as

3. Freeman, A. R. and Levine, Samuel A.: The Clinical Significance of the Systolic Murmur. Ann. Int. Med. May 1933, pp. 1371-1385.

syphilis, hyperthyroidism, anemia, hypertension, and the like, be painstakingly sought for.

The practicing physician, constantly beset by the problem of correctly interpreting murmurs, will do well to heed the closing words of Freeman and Levine—"In conclusion we wish to speak against the prevailing opinion that systolic murmurs have little or no significance and to emphasize the fact that although they are frequently present in the absence of heart disease, a proper interpretation of the intensity of the murmur and of the possible causative factors will aid greatly towards a more accurate diagnosis, prognosis, and treatment of disease."

W. W.

THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

ITINERARY OF OBSTETRICAL CLINICS

To Be Held By Dr. J. R. McCord

As announced in the August number of this Journal, arrangements have been made for Dr. J. R. McCord, Professor of Obstetrics at Emory University, Atlanta, to conduct a series of obstetrical lectures at various points in the State. The Bureau of Child Hygiene in Washington is sponsoring this program and is bearing the financial burden. The Medical Association of the State of Alabama will be host to Dr. McCord and all physicians are cordially invited to attend one of these series.

The complete itinerary has not yet been worked out, but it is hoped that during the coming fall and winter Dr. McCord can hold clinics at the following places:

Birmingham	Mobile
Brewton	Montgomery
Decatur	Opelika
Dothan	Selma
Gadsden	Sheffield
Huntsville	Talladega
Jasper	Tuscaloosa

It would be ideal if every county in the State could have this post-graduate course, but unfortunately this is impossible. However, these fourteen centres will enable every interested physician to attend without too great distance to travel.

Opelika will be Dr. McCord's first clinic and he will hold his first lecture Monday afternoon, September 25th. Daily lectures will be held for five days, ending with Friday, September 29th. It is hoped that all physicians in Lee, Russell, Macon, Tallapoosa, Chambers and Randolph Counties will make an effort to be present. It will probably be a long time before such an opportunity presents itself again.

Dr. McCord, as stated in the August Journal, is a student and a master of his specialty, and as a writer and lecturer he enjoys the high regard and esteem of the profession. He is eminently practical and his long and successful record with medical students and as post-graduate lecturer insure a profitable and wholesome result in a similar endeavor in Alabama.

TRANSACTIONS OF THE ASSOCIATION

(CONCLUDED)

REGISTRATION AT THE SIXTY-SIXTH CONSECUTIVE ANNUAL SESSION

Montgomery, April 18-21, 1933

LIFE COUNSELLORS

Baker, J. N., Montgomery
Bondurant, E. D., Mobile
Cunningham, William, Jasper
Davie, M. S., Dothan
Givhan, E. G., Montevallo
Green, Henry, Dothan
Guice, C. L., Gadsden

Harris, Seale, Birmingham
Harper, W. W., Selma
Heacock, J. D., Birmingham
Hill, L. L., Montgomery
Hill, R. S., Montgomery
Howle, J. A., Falkville
Justice, O. S., Central

McLeod, J. C., Bay Minette
Mohr, C. A., Mobile
Partlow, W. D., Tuscaloosa
Ray, J. U., Woodstock
Talley, D. F., Birmingham
Thigpen, C. A., Montgomery
Wilkinson, D. L., Birmingham

ACTIVE COUNSELLORS

Acker, P. J. M., Mobile
Alison, S. B., Minter
Ashcraft, V. L., Reform
Bailey, E. B., Demopolis
Beard, R. B., Troy
Bedsole, J. G., Jackson
Brothers, T. J., Anniston
Caldwell, E. V., Huntsville
Cannon, D. L., Montgomery
Chandler, Joel, Columbiana
Chenault, F. L., Decatur
Craddock, French H., Sylacauga
Dabney, M. Y., Birmingham
Doughty, M. E., Slocomb
Dowling, J. D., Birmingham
Faulk, W. M., Tuscaloosa
Garber, J. R., Birmingham
Gordon, S. A., Marion
Gragg, V. J., Clanton
Granger, F. G., Dothan
Greer, W. H., Sheffield
Gresham, G. L., Andalusia
Hagood, M. H., Brewton
Hatchett, W. C., Huntsville
Hayes, C. P., Elba

Hayes, J. P., Clanton
Hendrick, W. B., Hurtsboro
Hollis, J. S., Covin
Hough, J. S., Livingston
Howell, W. E., Haleyville
Hubbard, T. B., Montgomery
James, N. G., Hayneville
Kelly, E. L., Repton
Leach, Sydney, Tuscaloosa
Lester, B. S., Birmingham
Lightfoot, P. M., Shorter
Long, Clarence, Hurtsboro
Lull, Cabot, Birmingham
Lupton, F. A., Birmingham
Martin, J. C., Cullman
Mason, E. M., Birmingham
Mason, J. M., Birmingham
Mayer, K. A., Lower Peach Tree
McCall, D. T., Mobile
McLester, J. S., Birmingham
Miller, W. T., Fort Payne
Moore, D. S., Birmingham
Moore, G. H., Opelika
Moxley, J. B., Brantley
Newman, S. H., Dadeville

Noel, W. E., Boaz
Noland, Lloyd, Birmingham
Nolen, J. A. M., Alexander City
Oswalt, G. G., Mobile
Redden, R. H., Sulligent
Rountree, W. S., Birmingham
Rucker, E. W., Jr., Birmingham
Scott, Walter F., Birmingham
Searcy, G. H., Tuscaloosa
Searcy, H. B., Tuscaloosa
Shaddix, M. L., Alabama City
Shropshire, C. W., Birmingham
Smith, R. A., Brewton
Speir, P. V., Greenville
Tankersley, James, Prattville
Thomas, E. M., Prattville
Waldrop, R. W., Bessemer
Walker, A. A., Birmingham
Walls, J. J., Alexander City
Ward, H. S., Birmingham
White, A. L., Thomasville
Wilkerson, Fred, Montgomery
Williams, M. J., Oxford
Williamson, G. W., Hartford

DELEGATES

Autauga: R. G. Shanks, Autauga-
gaville; J. E. Wilkinson,
Prattville
Baldwin: F. L. Abernethy, Fo-
ley; H. W. Jordan, Roberts-
dale
Barbour: J. D. McLaughlin,
Blue Springs
Bibb: A. R. Sims, Coleanor;
S. C. Meigs, Centerville
Blount: J. E. Bell, Lehigh;
C. L. Stansberry, Oneonta
Bullock: G. M. Guthrie, Inver-
ness; W. H. McCaslan, Union
Springs
Butler: J. C. Johnston, Chap-
man; E. V. Stabler, Green-
ville
Calhoun: J. F. Posey, Anniston;
J. M. Whiteside, Anniston

Chambers: W. D. Gaines, La-
Fayette
Cherokee: S. C. Tatum, Center
Chilton: J. J. DuBose, Maples-
ville; C. S. Strock, Verbena
Choctaw: W. G. Carnathan, But-
ler; H. W. Robinson, Edna
Clarke: R. D. Neal, Grove Hill
Clebune: F. R. Wood, Heflin
Coffee: E. G. Bragg, Elba; J. B.
Woodall, New Brockton
Colbert: W. H. Blake, Jr., Shef-
field; W. E. McGrath, Shef-
field
Conecuh: W. R. Carter, Repton;
U. L. Jones, Brooklyn
Coosa: J. A. R. Chapman, Good-
water
Covington: G. C. Nix, Opp; F.
H. Boyd, Andalusia

Crenshaw: S. E. Jordan, High-
land Home
Cullman: J. G. Daves, Cullman;
T. H. Sudduth, Hanceville
Dale: W. L. Orr, Ozark; G. R.
Smith, Ozark
Dallas: J. F. Alison, Selma;
L. H. Moore, Orrville
DeKalb: Lee Weathington, Fort
Payne
Elmore: S. T. Cousins, Wetump-
ka; J. E. Cameron, Eclectic
Escambia: G. T. Rowe, Brewton
Etowah: A. C. Gipson, Gadsden;
DeWitt Faucett, Gadsden
Geneva: E. Tankersley, Samson
Hale: T. J. Anderson, Greens-
boro
Henry: C. T. Jones, Newville
Houston: A. S. Frasier, Dothan

- Jackson: Lucian Newman, Scottsboro
 Jefferson: S. H. Welch, Birmingham; J. W. Simpson, Birmingham; J. D. Sherrill, Birmingham; Edward O'Connell, Birmingham; J. A. Meadows, Birmingham; W. L. Cowles, Birmingham; H. Earle Conwell, Fairfield
 Lamar: J. A. Jackson, Sulligent
 Lauderdale: H. M. Simpson, Florence
 Lee: B. S. Bruce, Opelika; J. T. Oliver, Auburn
 Limestone: W. J. Donald, Athens
 Lowndes: R. B. Hagood, Lowndesboro; W. E. Lee, Fort Deposit
 Macon: B. W. Booth, Shorter; Murray Smith, Tuskegee
 Madison: W. G. McCown, Huntsville; C. A. Grote, Huntsville
 Marengo: W. T. Cocke, Demopolis; C. N. Lacey, Demopolis
 Marion: J. R. Burleson, Hamilton; S. S. Busby, Guin
 Marshall: J. M. Crawford, Arab; A. L. Isbell, Albertville
 Mobile: G. O. Segrest, Mobile; R. W. Stallworth, Mobile; J. M. Weldon, Mobile
 Monroe: W. A. Stallworth, Frisco City; T. E. Tucker, Monroeville
 Montgomery: W. S. Hannah, Montgomery; Clarence K. Weil, Montgomery; W. B. Westcott, Montgomery; W. W. Wilkerson, Montgomery.
 Morgan: E. M. Chenault, Decatur
 Perry: M. H. Eskew, Uniontown; B. B. Pugh, Uniontown
 Pickens: J. L. Conyers, Carrollton
 Pike: W. H. Garner, Troy
 Russell: R. B. McCann, Seale
 St. Clair: E. Y. Malone, Odenville
 Sumter: R. D. Spratt, Livingston
 Talladega: J. B. Graham, Talladega; J. M. Washam, Talladega
 Tallapoosa: R. A. Foshee, Alexander City; W. D. Wood, Camp Hill
 Tuscaloosa: P. B. Mayfield, Tuscaloosa; A. M. Walker, Tuscaloosa
 Walker: M. E. Smith, America; J. W. Simpson, Parrish
 Washington: I. C. Sumner, Chatom
 Wilcox: J. Paul Jones, Camden; E. L. McIntosh, Camden
 Winston: J. S. Snoddy, Haleyville

MEMBERS

- A
 Abbott, C. E., Tuscaloosa
 Abernethy, W. H., Troy
 Abernethy, W. L., Flomaton
 Allgood, H. W., Fairfield
 Anderson, B. F., Sellers
 Austin, P. W., Opelika
- B
 Banks, J. T., Dadeville
 Barfield, J. M., Lineville
 Barnes, J. M., Montgomery
 Bartlett, H. S., Montgomery
 Bayles, W. T., Luverne
 Benedict, S. R., Birmingham
 Bickerstaff, J. W., Montgomery
 Bird, B. C., Montgomery
 Blue, J. H., Montgomery
 Board, O. P., Birmingham
 Benner, E., Camden
 Bonner, G. W., Roanoke
 Boswell, F. P., Montgomery
 Bowden, C. C., Troy
 Bowman, J. L., Montgomery
 Branch, J. L., Montgomery
 Branscomb, Louise, Birmingham
 Bristol, B. T., Bessemer
 Britton, J. W., Anniston
 Broach, N. L., Pine Level
 Bruce, H. S., Opelika
 Brunson, E. T., Samson
 Burkett, W. T., Tusculumbia
 Burns, E. P., Birmingham
 Burns, R. A., Gadsden
 Byrd, M. M., West Point, Ga.
- C
 Caffey, B. F., Choccolocco
 Callaway, R. R., Birmingham
 Cannon, E. R., Vrederburgh
 Carraway, C. N., Birmingham
 Carter, H. R. Jr., Birmingham
 Carter, M. Barfield, Birmingham
 Cater, J. T., Montgomery
 Cawthon, E. W., Plateau
 Chapman, J. A., Alexander City
 Chapman, J. C., Birmingham
 Chason, J., Bay Minette
 Chason, O. L., Montgomery
 Chisholm, J. S., Selma
 Clayton, Price, Russellville
 Clements, F. H., Birmingham
 Clements, H. C., Benton
 Cobbs, B. W., Montgomery
 Cogburn, H. R., Mobile
 Cole, Leslie G., Lineville
 Coleman, G. C., Fairfield
 Colquitt, C. J., Bessemer
 Corrington, D. D., Tallassee
 Cotlin, C. S. Jr., LaFayette
 Couch, E. H., Guntersville
 Cowden, A. M., Mobile
 Cowles, A. D., Ramer
 Cowles, T. D., Troy
 Coxwell, A. B., Monroeville
 Crook, W. R., Elba
 Crowder, J. W., Bessemer
 Cummins, M. L., Ashford
 Curtis, R. C., Calera
- D
 Davidson, A. W., Bessemer
 Davidson, J. W., Banks
 Davidson, M. T., Birmingham
 Davis, E. W., Birmingham
 Dennis, J. W., Montgomery
 Dixon, D. P., Talladega
 Dixon, R. E., Alberta
 Dodson, J. H., Mobile
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 Donald, T. C., Birmingham
 Douglas, G. F., Birmingham
 Dowling, H. B., Mobile
 Duke, J. D., Heflin
 Durden, J. D., Anniston
- F
 Fargason, C. C., Dadeville
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 Frank, H. W., Gadsden
 Franklin, C. M., Union Springs
 Frazer, E. B., Mobile
- G
 Gaines, Toulmin, Mobile
 Gamble, W. M., Wetumpka
 Garlington, R. B., Brilliant
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 Gay, C. P., Geneva
 Gilder, C. K., Carbon Hill
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 Goode, J. H., Tuscaloosa
 Graham, A. H., Opelika
 Graham, G. S., Birmingham
 Gray, E. W., Sheffield
 Grayson, Richard, Selma
 Gwin, P. E., Sumiton
- H
 Hamner, L. H., Camp Hill
 Harmon, J. S., Elmore
 Harris, C. A., Bessemer
 Heiter, W. L., Mobile
 Hendrix, C. V., Oneonta
 Hill, J. F., Montgomery
 Hill, L. L. Jr., Montgomery
 Hill, R. C., York

Hilliard, C. W., Dothan
Holding, B. F., Montgomery
Horn, S. W., Bessemer
Howell, H. W., Hamilton
Huddleston, R. L., Deatsville
Hughes, V. P., Eva
Hurst, J. C., Opp

I

Isbell, A. L., Albertville

J

Jackson, A. C., Jasper
Jackson, B. F., Montgomery
Johns, L. J., Birmingham
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Johnson, Oscar, Pike Road
Johnston, F. T., Brundidge
Johnston, J. D., Brundidge
Johnston, N. A., Adamsville
Jones, W. N., Birmingham
Jordan, J. S., Birmingham

K

Kay, F. A., Tuscaloosa
Kenan, James, Selma
Kendrick, J. A., Greenville
Kennedy, Hughes, Jr., Birmingham
Kesmodel, K. F., Birmingham
Killian, C. D., Fort Payne
Killingsworth, N. W., Brundidge
King, C. O., Birmingham
Kirby, L. E., Birmingham
Kirkpatrick, M. B., Montgomery
Kirkpatrick, S., Selma

L

Lacey, E. P., Bessemer
Laslie, C. G., Montgomery
Leatherwood, E. F., Hayneville
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Lee, L. T., Selma
Lewis, T. K., Birmingham
Lewis, W. A., Enterprise
Little, J. H., Mobile
Lisenby, J. O., Atmore
Littlejohn, W. S., Birmingham
Littlepage, G. F., Sheffield
Long, D. J., Montgomery
Love, W. J., Opelika

M

Maas, M. A., Selma
Magruder, T. V., Birmingham
Marcus, T. J., Clanton
Martin, F. J., Greenville
Martin, J. A., Montgomery
Martin, J. H., Selma
Matthews, A. D., Ozark
Mayfield, P. B., Tuscaloosa

McBurney, Ralph, Tuscaloosa
McConnico, F. H., Montgomery
McEachern, C. P., Geneva
McElhenney, T. J., Bessemer
McFatter, T. K., Dothan
McGehee, W. W., Montgomery
McIntosh, E. L., Camden
Meeker, W. R., Mobile
Mehaffey, J. W., Birmingham
Mertins, Paul S., Montgomery
Miller, J. A., Wylam
Milligan, R. L., Montgomery
Moan, E. P., Wetumpka
Moore, C. H., Birmingham
Moore, C. W. C., Talladega
Moore, E. M., Clayton
Morgan, J. C., Fairfax
Morgan, J. R., Birmingham
Morgan, M. L., Brantley
Moseley, S. O., Selma
Moss, P. B., Selma

N

Nettles, D. R., Peterman
Nice, C. M., Birmingham
Nickerson, P., Sylacauga
Nichols, L. S., Geneva

O

Owsley, W. S., Wetumpka

P

Palmer, J. G., Opelika
Parker, L. D., Andalusia
Parker, Robert, Montgomery
Parks, L. L., Hamilton
Parnell, C. N., Maplesville
Parsons, J. L., Mulga
Parsons, W. C., Birmingham
Partlow, R. C., Tuscaloosa
Penton, J. R., Montgomery
Perdue, J. D., Mobile
Peters, U. J. W., Birmingham
Peters, W. M., Northport
Porch, R. D., Sylacauga
Prescott, W. E. Sr., Birmingham
Prescott, W. E. Jr., Birmingham

R

Reaves, J. U., Mobile
Reynolds, F. D., Montgomery
Reynolds, Gibson, Montgomery
Reynolds, R. D., Ozark
Rice, C. H., Montgomery
Riggs, S. W., Pleasant Hill
Robertson, J. P., Birmingham
Roe, L. W., Mobile
Rose, J. E., Flomaton
Rowe, H. S., Mt. Vernon
Rowe, J. F., Mobile
Russell, R. O., Birmingham

S

Salley, G. W., Atmore
Salter, C. L., Talladega
Salter, P. P., Eufaula
Salter, W. M., Anniston
Savage, H. J., Gadsden
Schoolier, T. E., Centerville
Scott, E. Laurence, Birmingham
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Simon, H. E., Birmingham
Shepherd, R. H., Townley
Skinner, Marcus M., Selma
Smith, J. L., Montgomery
Sorrell, L. E., Birmingham
Sparks, D. H., Birmingham
Speir, R. C., Birmingham
Stanley, W. A., Enterprise
Stewart, R. C., Sylacauga
Stabler, L. V., Greenville
Stevenson, F. C., Montgomery
Stough, T. J., Montgomery
Stough, W. V., Montgomery
Street, T. H., Alexander City
Suggs, S. D., Montgomery

T

Taylor, G. M., Montgomery
Taylor, T. F., Tuskegee
Thigpen, F. M., Montgomery
Thomas, A. E., Montgomery
Thomason, J. M., Midway
Thorington, Chilton, Montgomery
Tippins, H. K., Georgiana
Turlington, L. F., Birmingham
Turner, W. H., Dothan

W

Wainwright, S. P., Birmingham
Waldrop, A. M., Jasper
Walker, J. E., Opelika
Walker, L. M., Jasper
Walsh, Groesbeck, Fairfield
Ward, J. A., Birmingham
Watkins, J. Harold, Montgomery
Watkins, M. L., Glenwood
Watson, R. H., Georgiana
Whiteside, M. S., Cullman
Wilkinson, H. B., Montgomery
Wilkinson, J. G., Birmingham
Williams, C. O., West Point, Ga.
Williamson, G. W., Bessemer
Wilson, F. C., Birmingham
Wilson, J. D., Birmingham
Wilson, W. E., Montgomery
Wynn, A. L., Florala

Y

Yarbrough, C. S., Auburn
Yarbrough, J. F., Montgomery

VISITORS

Dr. Irvin Abell, Louisville, Ky.
Dr. E. G. Ballenger, Atlanta, Ga.
Dr. N. B. Bateman, Jr., Columbus, Ga.
Dr. Frank K. Boland, Atlanta, Ga.

Dr. B. R. Bradford, Birmingham
Dr. Thomas Duncan, Fleta
Dr. D. H. Finlay, Blountstown, Fla.
Dr. J. Shelton Horsley, Richmond, Va.

Dr. C. E. Johnson, Montgomery
Dr. H. D. Johnson, Memphis, Tenn.
Dr. M. F. Langston, Montgomery
Dr. Harold P. McDonald, Atlanta, Ga.

Dr. J. B. McLester, Birmingham	Dr. J. G. Standifer, Blakely, Ga.	Mrs. R. C. Hill
Dr. Hugh Morgan, Nashville, Tenn.	Dr. A. W. White, Pensacola, Fla.	Mrs. Vivian Hill
Dr. W. J. B. Owings, Brent	Dr. B. T. Wise, Americus, Ga.	Mrs. S. Kirkpatrick
Dr. Albert C. Petrik, Birmingham	Mrs. B. F. Anderson	Mrs. T. J. McElhenney
Dr. James H. Putman, Birmingham	Mrs. E. B. Bailey	Mrs. P. B. Moss
Dr. F. W. Rankin, Lexington, Ky.	Mrs. W. H. Blake, Jr.	Mrs. W. J. Owings
Dr. R. W. Scott, Cleveland, Ohio	Mrs. J. Chason	Mrs. Julian Palmer
Dr. R. E. Semmes, Memphis, Tenn.	Mrs. H. R. Cogburn	Mrs. J. L. Parsons
Dr. John J. Shea, Memphis, Tenn.	Mrs. J. H. Dodson	Mrs. W. C. Parsons
	Mrs. J. M. Donald	Mrs. S. W. Riggs
	Mrs. C. L. Guice	Mrs. R. G. Shanks
	Mrs. Estes H. Hargis	Mrs. David H. Sparks

SUMMARY OF ANNUAL ATTENDANCE

Year	Life Counsellors	Active Counsellors	Delegates	Members	Visitors	Total	Place
1910	10	44	83	157	51	344	Mobile
1911	14	53	66	139	19	291	Montgomery
1912	16	63	92	348	40	559	Birmingham
1913	7	49	83	124	17	280	Mobile
1914	16	67	85	226	20	414	Montgomery
1915	32	74	108	429	49	692	Birmingham
1916	19	66	92	106	41	306	Mobile
1917	18	64	96	199	32	409	Montgomery
1918	27	63	80	257	44	471	Birmingham
1919	22	43	87	94	102	348	Mobile
1920	16	61	59	85	51	272	Anniston
1921	26	65	73	183	58	405	Montgomery
1922	26	72	76	314	68	556	Birmingham
1923	14	48	66	106	50	284	Mobile
1924	29	70	84	230	79	492	Montgomery
1925	27	78	97	328	113	643	Birmingham
1926	33	74	105	194	131	537	Mobile
1927	36	85	104	252	87	564	Montgomery
1928	33	77	108	507	106	831	Birmingham
1929	19	60	102	176	109	466	Mobile
1930	32	83	106	286	102	609	Montgomery
1931	26	80	116	410	158	790	Birmingham
1932	19	60	101	158	133	471	Mobile
1933	21	74	103	264	85	547	Montgomery

Heacock, Jos. D., Birmingham (9)	1912
Heflin, Wyatt, Birmingham (9)	1893
Hill, Luther Leonidas, Montgomery (2)	1888
Hill, Robert Somerville, Montgomery (2)	1898
Howle, James Augustus, Falkville (8)	1895
Jones, Capers Capehart, East Lake (9)	1881
Justice, Oscar Suttle, Central (4)	1896
Lupton, Frank A., Birmingham (9)	1913
McCain, William Jasper, Livingston (6)	1898
McElrath, William Sparke, Cedar Bluff (5)	1908
McLeod, John Calvin, Bay Minette (2)	1911
McLester, James Somerville, Birmingham (9)	1913
Mohr, Chas. A., Mobile (1)	1909
Morris, William E., Georgiana (2)	1913
Oates, William Henry, Mobile (1)	1913
Partlow, William Dempsey, Tuscaloosa (6)	1909
Petty, Frank Paul, Decatur (8)	1909
Pride, William Thomas, Madison (8)	1899
Prince, Edward Mortimer, Birmingham (9)	1909
Ray, Jacob Ussery, Woodstock (6)	1906
Simms, Benjamin Britt, Talladega (4)	1901
Stewart, John Pope, Attalla (5)	1908
Talley, Dyer Findley, Birmingham (9)	1902
Thigpen, Charles Alston, Montgomery (2)	1900
Turner, James Perry, Cropwell (4)	1912
Wilkinson, David Leonidas, Birmingham (9)	1902
Total 44	

ACTIVE COUNSELLORS

Those marked with a † are serving last terms of six years.
Those marked with an asterisk (*) are serving second terms of seven years.
Those without a symbol are serving first terms of seven years.

The numeral is the number of the congressional district.

THE ROLL OF COUNSELLORS

REVISION OF 1933

LIFE COUNSELLORS

Name and Address	Date of Election
Andrews, Glenn, Montgomery (2)	1893
Baker, J. N., Montgomery (2)	1905
Betts, William Frank, Evergreen (2)	1904
Bondurant, Eugene DuBose, Mobile (1)	1894
Britt, W. S., Eufaula (3)	1905
Cameron, Matthew Bunyan, Eutaw (6)	1893
Cunningham, William Moody, Jasper (7)	1912
Davie, Mercer Stillwell, Dothan (3)	1904
Faulk, William M., Tuscaloosa (6)	1913
Givhan, Edgar Gilmore, Montevallo (6)	1903
Gordon, Samuel A., Marion (6)	1913
Green, Henry, Dothan (3)	1900
Gresham, George L., Andalusia (2)	1913
Guice, Charles Lee, Gadsden (5)	1899
Harper, Wm Wade, Selma (4)	1902
Harris, Elisha McCullough, Russellville (7)	1904
Harris, Seale, Birmingham (9)	1903
Harrison, William Groce, Birmingham (9)	1896

	Date of Election	Expiration
Acker, Paul Jerome Morris, Mobile (1)	*1930	to 1937
Alison, Samuel Blakemore, Minter (4)	†1933	to 1939
Ashcraft, Virgil Lee, Reform (7)	†1933	to 1939
Bailey, E. B., Demopolis (1)		1928 to 1935
Beard, Robert Briggs, Troy (2)		1932 to 1939
Bedsloe, James Goodman, Jackson (1)	*1929	to 1936
Brothers, Thomas J., Anniston (4)		1914
Burdshaw, Shelby L., Headland (3)	*1928	to 1935
Caldwell, Edwin Valdivia, Huntsville (8)	†1932	to 1938
Cannon, Douglas L., Montgomery (2)		1928 to 1935
Chandler, Joel C., Columbiana (6)	*1930	to 1937
Chenault, Frank L., Decatur (8)		1917
Craddock, French H., Sylacauga (4)		1932 to 1939
Crutcher, John Sims, Athens (8)		1915
Cryer, George A., Anniston (4)	*1932	to 1939
Dabney, Marye Y., Birmingham (9)	*1930	to 1937
Doughty, Mordecai Edward, Slocomb (3)	*1929	to 1936
Dowling, Judson Davis, Birmingham (9)	*1929	to 1936
Dupree, Marion W., Athens (8)	*1930	to 1937
Garber, James R., Birmingham (9)		1932 to 1939
Gragg, Vincent Jones, Clanton (6)	*1928	to 1935
Granger, F. G., Ashford (3)		1928 to 1935

ACTIVE COUNSELLORS—Continued

	Date of	
	Elec- tion	Expi- ration
Greer, William H., Sheffield (8).....	*1927 to 1934	
Hagood, M. H., Brewton (2).....	*1931 to 1938	
Hatchett, Wm. C., Huntsville (8).....	1929 to 1936	
Hayes, Charles Philips, Elba (3).....	*1927 to 1934	
Hayes, Julius Poe, Clanton (6).....	*1927 to 1934	
Heflin, Howell T., Birmingham (9).....	1914	
Hendrick, Walter Branham, Hurtsboro (3).....	1915	
Hill, Robert L., Winfield (7).....	*1931 to 1938	
Hollis, Jonathan Shelton, Covin (7).....	*1930 to 1937	
Hough, James Spencer, Livingston (6).....	1930 to 1937	
Howell, William Edward, Haleyville (7).....	†1932 to 1938	
Hubbard, T. Brannon, Montgomery (2).....	*1932 to 1938	
Hutchinson, Wm. H., Childersburg (4).....	*1929 to 1936	
Jackson, Alva A., Florence (8).....	†1932 to 1938	
James, Ashley D., Choctaw (1).....	1915	
James, Norman Gilchrist, Hayneville (2).....	*1928 to 1935	
Kelly, Edward Lamar, Evergreen (2).....	1931 to 1938	
Leach, Sydney, Tuscaloosa (6).....	*1927 to 1934	
Lester, Belford S., Birmingham (9).....	*1930 to 1937	
Lightfoot, Phillip Malcolm, Shorter (3).....	†1932 to 1938	
Long, Clarence, Hurtsboro (3).....	*1927 to 1934	
Lull, Cabot, Birmingham (9).....	†1933 to 1939	
Martin, James Cordie, Cullman (7).....	1917	
Mason, E. M., Birmingham (9).....	*1931 to 1938	
Mason, James Monroe, Birmingham (9).....	†1932 to 1938	
Mayer, Kossuth Aaron, Lower Peach Tree (1).....	†1933 to 1939	
McAdory, Edward Dudley, Cullman (7).....	*1927 to 1934	
McCall, Daniel T., Mobile (1).....	*1930 to 1937	
Miller, W. T., Ft. Payne (5).....	1928 to 1935	
Moore, David S., Jr., Birmingham (9).....	1932 to 1939	
Moore, Gilmer H., Opelika (3).....	1932 to 1939	
Moxley, Joseph Benjamin, Brantley (2).....	*1928 to 1935	
Newman, Samuel Harris, Dadeville (5).....	*1932 to 1939	
Noel, W. E., Boaz (5).....	1928 to 1935	
Noland, Lloyd, Fairfield (9).....	1929 to 1936	
Nolen, John A. M., Alexander City (5).....	*1927 to 1934	
Oswalt, G. G., Mobile (1).....	1929 to 1936	
Price, Albert Bascom, Gordo (7).....	†1933 to 1939	
Ralls, Arthur W., Gadsden (5).....	†1933 to 1939	
Redden, Raymond Hollis, Sulligent (7).....	*1933 to 1940	
Rountree, W. S., Wylam (9).....	*1931 to 1938	
Rucker, Edmon W., Birmingham (9).....	*1929 to 1936	
Sankey, Howard J., Nauvoo (7).....	1914	
Scott, Walter F., Birmingham (9).....	*1929 to 1936	
Searcy, Geo. H., Tuscaloosa (6).....	1929 to 1936	
Searcy, Harvey Brown, Tuscaloosa (6).....	*1930 to 1937	
Shaddix, Marion L., Alabama City (5).....	1932 to 1939	
Shropshire, Courtney William, Birmingham (9).....	*1930 to 1937	
Sledge, Edward Simmons, Mobile (1).....	*1929 to 1936	
Smith, Russell Aubrey, Brewton (2).....	†1932 to 1938	
Speir, Phillip V., Greenville (2).....	1917	
Tankersley, James, Prattville (4).....	1928 to 1935	
Taylor, Woodie R., Town Creek (8).....	*1932 to 1939	
Thomas, Eugene Marvin, Prattville (4).....	*1927 to 1934	
Tucker, John S., Centerville (6).....	*1933 to 1940	
Waldrop, R. W., Bessemer (9).....	*1929 to 1936	
Walker, Alfred A., Birmingham (9).....	*1930 to 1937	
Walls, J. J., Alexander City (5).....	*1931 to 1938	
Ward, Henry Silas, Birmingham (9).....	1915	
White, Alexander L., Thomasville (1).....	1928 to 1935	
Whitman, Clayborne R., Tuscumbia (8).....	1929 to 1936	
Wilkerson, Fred Wooten, Montgomery (2).....	†1933 to 1939	
Williams, Mark Johnson, Oxford (4).....	*1927 to 1934	
Williamson, George W., Hartford (3).....	†1932 to 1938	
Wright, David H., Berry (7).....	1932 to 1939	
Total 87		

COUNSELLORS-ELECT

Abernethy, Floyd L., Foley (2).....	1933 to 1940
Anderson, Thos. J., Greensboro (6).....	1933 to 1940
Cowles, Wm. L., Birmingham (9).....	1933 to 1940

Gresham, Walter A., Russellville (7).....	1933 to 1940
Jordan, Samuel E., Highland Home (2).....	1933 to 1940
Kirkpatrick, Samuel, Selma (4).....	1933 to 1940
Lewis, Walter A., Enterprise (3).....	1933 to 1940
Martin, John A., Montgomery (2).....	1933 to 1940
Meigs,* Stephen C., Centerville (6).....	1933 to 1940
Parker, Lorenzo D., Andalusia (2).....	1933 to 1940
Perdue, James D., Mobile (1).....	1933 to 1940
Walsh, Groesbeck, Fairfield (9).....	1933 to 1940
Wood, Wiley D., Camp Hill (5).....	1933 to 1940
Total 13	

THE ROLL OF THE COLLEGE OF COUNSELLORS BY CONGRESSIONAL DISTRICTS

On this roll the names of the Counsellors are given by Congressional Districts. It is intended to serve as a guide in the election of new Counsellors, with a view to the distribution of them in approximate proportion to the number of members in the several districts. It is not considered to be good policy, and it is not considered to be fair and right, to give a few large towns greatly more than their pro rata share of Counsellors. The calculations are based on the nearest whole number. On April 1, 1933, there were 1,476 members in the county medical societies. That would give one Counsellor to every 15 members. The membership set forth in the following is that of April 1.

FIRST DISTRICT

Names of Counsellors—A. D. James, Choctaw; J. G. Bedsole and A. L. White, Clarke; E. B. Bailey, Marengo; E. S. Sledge, P. J. M. Acker, D. T. McCall, G. G. Oswalt, and J. D. Perdue, Mobile; and K. A. Mayer, Wilcox.

County	Members	Counsellors
Choctaw	11	1
Clarke	10	2
Marengo	10	1
Mobile	88	5
Monroe	16	0
Washington	5	0
Wilcox	10	1
	150	10

SECOND DISTRICT

Names of Counsellors—F. L. Abernethy, Baldwin; P. V. Speir, Butler; E. L. Kelly, Conecuh; L. D. Parker, Covington; J. B. Moxley and S. E. Jordan, Crenshaw; M. H. Hagood and R. A. Smith, Escambia; N. G. James, Lowndes; T. B. Hubbard, F. W. Wilkerson, J. A. Martin and Douglas L. Cannon, Montgomery; and R. B. Beard, Pike.

County	Members	Counsellors
Baldwin	12	1
Butler	16	1
Conecuh	8	1
Covington	19	1
Crenshaw	12	2
Escambia	18	2
Lowndes	5	1
Montgomery	82	4
Pike	21	1
	193	14

THIRD DISTRICT

Names of Counsellors—C. P. Hayes and W. A. Lewis, Coffee; M. E. Doughty and G. W. William-

*Dr. Meigs declined subsequent to the meeting.

son, Geneva; S. L. Burdeshaw, Henry; F. G. Granger, Houston; G. H. Moore, Lee; P. M. Lightfoot, Macon; and Clarence Long and W. B. Hendrick, Russell.

County	Members	Counsellors
Barbour	13	0
Bullock	8	0
Coffee	17	2
Dale	9	0
Geneva	17	2
Henry	9	1
Houston	27	1
Lee	18	1
Macon	10	1
Russell	4	2
	132	10

FOURTH DISTRICT

Names of Counsellors—James Tankersley and E. M. Thomas, Autauga; T. J. Brothers, M. J. Williams and G. A. Cryer, Calhoun; S. B. Alison, S. Kirkpatrick, Dallas; and W. H. Hutchinson and French Cradock, Talladega.

County	Members	Counsellors
Autauga	6	2
Calhoun	38	3
Clay	8	0
Coosa	4	0
Dallas	39	2
Elmore	16	0
St. Clair	11	0
Talladega	21	2
	143	9

FIFTH DISTRICT

Names of Counsellors—W. T. Miller, DeKalb; A. W. Ralls and M. L. Shaddix, Etowah; W. E. Noel, Marshall; and J. A. M. Nolen, J. J. Walls, S. H. Newman and W. D. Wood, Tallapoosa.

County	Members	Counsellors
Chambers	16	0
Cherokee	4	0
Cleburne	3	0
DeKalb	15	1
Etowah	44	2
Marshall	15	1
Randolph	11	0
Tallapoosa	15	4
	123	8

SIXTH DISTRICT

Names of Counsellors—J. S. Tucker, Bibb; J. P. Hayes and V. J. Gragg, Chilton; T. J. Anderson, Hale; Joel Chandler, Shelby; J. S. Hough, Sumter; and Sydney Leach, H. B. Searcy and G. H. Searcy, Tuscaloosa.

County	Members	Counsellors
Bibb	13	1
Chilton	10	2
Greene	5	0
Hale	7	1
Perry	7	0
Shelby	16	1
Sumter	12	1
Tuscaloosa	45	3
	115	9

SEVENTH DISTRICT

Names of Counsellors—J. C. Martin and E. D. McAdory, Cullman; J. S. Hollis and D. H. Wright, Fayette; W. A. Gresham, Franklin; R. H. Redden, Lamar; R. L. Hill, Marion; V. L. Ashcraft and A. B. Price, Pickens; H. J. Sankey, Walker; and W. E. Howell, Winston.

County	Members	Counsellors
Blount	11	0
Cullman	13	2
Fayette	7	2
Franklin	15	1
Lamar	13	1
Marion	11	1
Pickens	13	2
Walker	35	1
Winston	10	1
	128	11

EIGHTH DISTRICT

Names of Counsellors—W. H. Greer and C. R. Whitman, Colbert; A. A. Jackson, Lauderdale; W. R. Taylor, Lawrence; J. S. Crutcher and M. D. Dupree, Limestone; E. V. Caldwell and W. C. Hatchett, Madison; and F. L. Chenault, Morgan.

County	Members	Counsellors
Colbert	18	2
Jackson	10	0
Lauderdale	22	1
Lawrence	9	1
Limestone	10	2
Madison	25	2
Morgan	28	1
	122	9

NINTH DISTRICT

Names of Counsellors—W. L. Cowles, H. T. Heffin, H. S. Ward, J. M. Mason, Cabot Lull, R. W. Waldrop, W. F. Scott, E. W. Rucker, J. D. Dowling, M. Y. Dabney, B. S. Lester, C. W. Shropshire, Alfred A. Walker, E. M. Mason, W. S. Rountree, Lloyd Noland, J. R. Garber, D. S. Moore, Jr., and Groesbeck Walsh.

County	Members	Counsellors
Jefferson	370	19

THE ROLL OF CORRESPONDENTS

"Distinguished members of the medical profession residing outside of the State, and Counsellors of the Association, who after not less than ten years of faithful service may have resigned their counsellorships, shall be eligible for election as Correspondents.

"Correspondents shall have the privilege of transmitting or presenting to the Association such communications, or scientific essays, as they may deem proper."—*From the Constitution.*

Name and Address	Date of Election
Andrew J. Coley, Oklahoma City.....	1909
W. S. Thayer, Baltimore.....	1921
Lewellys F. Barker, Baltimore.....	1921
Rudolph Matas, New Orleans.....	1921

Frank Smithies, Chicago.....	1921
John B. Elliott, Jr., New Orleans.....	1921
Howard A. Kelly, Baltimore.....	1921
Wm. J. Mayo, Rochester, Minn.....	1921
George W. Crile, Cleveland, Ohio.....	1921
Henry A. Christian, Boston.....	1921
J. Whitridge Williams, Baltimore, Md.....	1921
Chas. H. Mayo, Rochester, Minn.....	1922
H. A. Royster, Raleigh, N. C.....	1926
Stewart Roberts, Atlanta.....	1927
G. Canby Robinson, Nashville.....	1928
Louis B. Wilson, Rochester, Minn.....	1930
R. S. Cunningham, Nashville.....	1932
A. Benson Cannon, New York.....	1932

SCHEDULE OF THE ANNUAL SESSIONS AND PRESIDENTS SINCE THE RE- ORGANIZATION IN 1868

<i>Place and President</i>	<i>Year</i>
Selma—Albert Galatin Mabry.....	1868
Mobile—Albert Galatin Mabry.....	1869
Montgomery—Richard Frazer Michel.....	1870
Mobile—Francis Armstrong Ross.....	1871
Huntsville—Thomas Childress Osborne.....	1872
Tuscaloosa—George Ernest Kumpe.....	1873
Selma—George Augustus Ketchum.....	1874
Montgomery—Job Sobieski Weatherly.....	1875
Mobile—John Jefferson Dement.....	1876
Birmingham—Edward Davies McDaniel.....	1877
Eufaula—Peter Bryce.....	1878
Selma—Robert Dickens Webb.....	1879
Huntsville—Edmund Pendleton Gaines.....	1880
Montgomery—William Henry Anderson.....	1881
Mobile—John Brown Gaston.....	1882
Birmingham—Clifford Daniel Parke.....	1883
Selma—Mortimer Harvey Jordan.....	1884
Greenville—Benjamin Hogan Riggs.....	1885
Anniston—Francis Marion Peterson.....	1886
Tuscaloosa—Samuel Dibble Seelye.....	1887
Montgomery—Edward Henry Sholl.....	1888
Mobile—Milton Columbus Baldrige.....	1889
Birmingham—Charles Higgs Franklin.....	1890
Huntsville—William Henry Sanders.....	1891
Montgomery—Benjamin James Baldwin.....	1892
Selma—James Thomas Searcy.....	1893
Birmingham—Thaddeus Lindley Robertson.....	1894
Mobile—Richard Matthew Fletcher.....	1895
Montgomery—William Henry Johnston.....	1896
Selma—Barckley Wallace Toole.....	1897
Birmingham—Luther Leonidas Hill.....	1898
Mobile—Henry Altamont Moody.....	1899
Montgomery—John Clarke LeGrande.....	1900
Selma—Russell McWhorter Cunningham.....	1901
Birmingham—Edwin Lesley Marechal.....	1902
Talladega—Glenn Andrews.....	1903
Mobile—Matthew Bunyan Cameron.....	1904
Montgomery—Capers Capehart Jones.....	1905
Birmingham—Eugene DuBose Bondurant.....	1906
Mobile—George Tighlman McWhorter.....	1907
Montgomery—Samuel Wallace Welch.....	1908
Birmingham—Benjamin Leon Wyman.....	1909
Mobile—Wooten Moore Wilkerson.....	1910
Montgomery—Wyatt Heflin Blake.....	1911
Birmingham—Lewis Coleman Morris.....	1912
Mobile—Harry Tutwiler Inge.....	1913
Montgomery—Robert S. Hill.....	1914
Birmingham—Benjamin Britt Simms.....	1915

<i>Place and President</i>	<i>Year</i>
Mobile—James Norment Baker.....	1916
Montgomery—Henry Green.....	1917
Birmingham—William Dempsey Partlow.....	1918
Mobile—Isaac LaFayette Watkins.....	1919
Anniston—James Somerville McLester.....	1920
Montgomery—Louis William Johnston.....	1921
Birmingham—Dyer F. Talley.....	1922
Mobile—Walter S. Britt.....	1923
Montgomery—W. W. Harper.....	1924
Birmingham—J. D. Heacock.....	1925
Mobile—C. A. Mohr.....	1926
Montgomery—A. L. Harlan.....	1927
Birmingham—John D. S. Davis.....	1928
Mobile—E. V. Caldwell.....	1929
Montgomery—L. E. Broughton.....	1930
Birmingham—W. G. Harrison.....	1931
Mobile—Toulmin Gaines.....	1932
Montgomery—Samuel Kirkpatrick.....	1933

SECRETARIES OF THE MEDICAL ASSOCIA- TION OF THE STATE OF ALABAMA

1852-1854.....	George A. Ketchum
1854-1855.....	R. Miller
1869-1873.....	Jerome Cochran
1874-1878.....	B. H. Riggs
1879-1892.....	T. A. Means
1893-1897.....	J. R. Jordan
1897-1904.....	G. P. Waller
1904-1906.....	L. C. Morris
1906-1915.....	J. N. Baker
1915-1923.....	H. G. Perry
1923-1924.....	Douglas L. Cannon
1924-1930.....	B. B. Simms
1930-.....	Douglas L. Cannon

TREASURERS OF THE MEDICAL ASSOCIA- TION OF THE STATE OF ALABAMA

1854-1855.....	W. P. Reese
1869-1898.....	W. C. Jackson
1898-1915.....	H. G. Perry
1915-.....	J. U. Ray

SCHEDULE OF JEROME COCHRAN LECTURERS

1899—J. T. Searcy, Tuscaloosa—What Is Insani- ty?
1900—Wm. Osler, Baltimore—Not present.
1901—Wm. Osler, Baltimore—Not present.
1902—Nathan Bozeman, New York—Declined.
1903—George H. Price, Nashville—The History of Medicine.
1904—W. S. Thayer, Baltimore—Cardiac and Vascular Complications of Typhoid Fever.
1905—Robert Abbe, New York—The Problems of
1906—Joseph Collins, Boston—Arteriosclerosis.
Surgery.
1907—Nicholas Senn, Chicago—Final Triumph of Scientific Medicine.
1908—E. L. Marechal, Mobile—Absent.
1909—Lewellys F. Barker, Baltimore—Clinical Methods of Cardiac Investigation.
1910—Frank S. Meara, New York—Some Prob- lems of Nutrition in Early Life.
1911—Rudolph Matas, New Orleans—Inflamma- tory Tuberculosis.

1912—Maurice H. Richardson, Boston—Elimination of Preventable Disasters from Surgery.

1913—L. L. Hill, Montgomery—Surgical Complications and Sequelae of Typhoid Fever.

1914—Frank Smithies, Chicago—Contributions of the Twentieth Century to the Better Understanding of Gastric Cancer.

1915—John B. Elliott, Jr., New Orleans—Abscess of Liver.

1916—Howard A. Kelly, Baltimore—Radium Therapy.

1917—Wm. J. Mayo, Rochester—Importance of Septic Infection in the Three Great Plagues.

1918—George E. Bushnell, Washington—The Army in Relation to the Tuberculosis Problem.

1919—George W. Crile, Cleveland, Ohio—Abdominal Surgery in Civil and Military Hospitals.

1920—Henry A. Christian, Boston—Bright's Disease With Special Reference to Its Treatment.

1921—J. Whitridge Williams, Baltimore—A Critical Review of Twenty-One Years' Experience with Caesarean Section.

1922—Chas. H. Mayo, Rochester, Minn.—The Thyroid and Its Diseases.

1923—Jas. S. McLester, Birmingham—Nutrition in Its Newer Aspects.

1924—James S. Stone, Boston—Abdominal Diagnoses in Children.

1925—H. A. Royster, Raleigh—The Surgeon's Heritage and Outlook.

1926—Stewart Roberts, Atlanta—The Heart Muscle.

1927—G. Canby Robinson, Nashville—The Mechanism of Heart Failure and Its Correction.

1928—John B. Deaver, Philadelphia—Chronic Pancreatitis.

1929—Louis B. Wilson, Rochester, Minn.—Some Suggestions for Improved Training of Medical Specialists.

1930—Walter E. Sistrunk, Dallas, Texas—The Part That Surgical Anesthesia Has Played in Medical Science.

1931—R. S. Cunningham, Nashville, Tenn.—Studies on the Pathology of Tuberculosis and Syphilis.

1932—A. Benson Cannon, New York—Practical Points on the Diagnosis and Treatment of the so-called Lymphoblastoma Group of Diseases.

1933—J. Shelton Horsley, Richmond—Cancer of the Stomach and Colon.

OFFICERS OF THE ASSOCIATION

1933-1934

PRESIDENT

JAMES R. GARBER (1934).....Birmingham

VICE-PRESIDENTS

W. M. SALTER (1934).....Anniston

G. W. WILLIAMSON (1935).....Hartford

E. D. McADORY (1936).....Cullman

A. B. COXWELL (1937).....Monroeville

SECRETARY

DOUGLAS L. CANNON (1934).....Montgomery

TREASURER

J. U. RAY (1938).....Woodstock

THE STATE BOARD OF CENSORS

W. D. PARTLOW, Chairman (1937).....Tuscaloosa

C. A. THIGPEN (1937).....Montgomery

R. S. HILL (1934).....Montgomery

M. Y. DABNEY (1934).....Birmingham

E. V. CALDWELL (1935).....Huntsville

S. A. GORDON (1935).....Marion

D. T. McCALL (1936).....Mobile

J. S. McLESTER (1936).....Birmingham

F. W. WILKERSON (1938).....Montgomery

M. S. DAVIE (1938).....Dothan

STATE HEALTH OFFICER

J. N. BAKER (1935).....Montgomery

DELEGATES AND ALTERNATES TO THE AMERICAN MEDICAL ASSOCIATION

Delegate—C. A. GROTE.....Huntsville

Alternate—J. HAROLD WATKINS.....Montgomery

(Terms expire with the 1934 session of the American Medical Association)

Delegate—J. N. BAKER.....Montgomery

Alternate—H. B. SEARCY.....Tuscaloosa

Delegate—A. A. WALKER.....Birmingham

Alternate—J. M. WELDON.....Mobile

(Terms expire with the 1935 session of the American Medical Association)

COMMITTEES OF THE ASSOCIATION

LEGISLATION AND MEDICAL ECONOMICS

(To Be Appointed)

MENTAL HYGIENE

FRANK A. KAY, Chairman, Tuscaloosa.....1938

L. H. WOODRUFF, Tuscaloosa.....1937

E. L. McCAFFERTY, Mt. Vernon.....1936

J. G. BEDSOLE, Jackson.....1935

J. A. BECTON, Birmingham.....1934

MATERNAL AND INFANT WELFARE

A. E. THOMAS, Chairman, Montgomery.....1938

H. P. DAWSON, Co-Chairman, Montgomery.....1937

HUGHES KENNEDY, JR., Birmingham.....1936

T. M. BOULWARE, Birmingham.....1935

J. M. WELDON, Mobile.....1934

PREVENTION OF CANCER

K. F. KESMODEL, Chairman, Birmingham.....1938

I. M. GRAVLEE, Mobile.....1937

H. M. SIMPSON, Florence.....1936

J. P. CHAPMAN, Selma.....1935

J. T. ELLIS, Dothan.....1934

AUXILIARY ON PREVENTION OF CANCER

J. A. MARTIN.....Montgomery

ALSTON MAXWELL.....Tuscaloosa

J. A. MEADOWS.....Birmingham

J. B. LAUGHLIN.....Huntsville

J. O. MORGAN.....Gadsden

NEAL SELLERS.....Anniston

PREVENTION OF BLINDNESS AND DEAFNESS

H. B. SEARCY, Chairman, Tuscaloosa.....1934

H. F. MARTIN, Birmingham.....1935

LUCIEN BROWN, Gadsden.....1936

N. T. DAVIE, Anniston.....1937

B. B. WARWICK, Talladega.....1938

DEPARTMENT OF PUBLIC HEALTH

BUREAU OF ADMINISTRATION

J. N. Baker, M. D.,
State Health Officer in Charge

REFRESHER OBSTETRIC COURSES FOR ALABAMA PHYSICIANS

The entire profession of the State knows the unselfish and intense interest which the President of the Association has displayed in seeking to bring about a betterment in the obstetric and midwifery situation in Alabama. For some years he has served as a member and as chairman of the Association's Committee on Maternal Welfare. At the annual meeting of 1931 and again in 1933, he directed attention to the unsavory death rate which Alabama enjoys, due in part at least, to a pitiable amount of prenatal care in the matter of puerperal albuminuria and convulsions—conditions which are largely controllable and preventable. Appreciating the vital part played by the practicing physician in the problem of an improved obstetric service, he has arranged, through the kindly offices of the Federal Children's Bureau, to provide, at conveniently located points within the State, "refresher courses" in obstetrics to be given by Dr. J. R. McCord, Professor of Obstetrics in Emory University. Dr. McCord's reputation as a teacher and as a lucid and forceful expounder of the basic things underlying good obstetrics is so firmly fixed as to need no further comment. Every practicing physician who assumes obstetric obligations should carefully read the brief article by President Garber and appearing under the Association Forum of the August issue of *The Journal*. On page 108 of this issue is carried a partial schedule of the places and dates which have been worked out for Dr. McCord's itinerary. It is also planned to give ample notice by mail to all physicians residing in the territory adjacent and accessible to the various points at which these clinics will be held. The entire program will be conducted under the auspices of the medical profession and for physicians only.

INTERPRETING MEDICINE TO THE PUBLIC

The July Quarterly Bulletin, issued by the Milbank Memorial Fund, carries an interesting article by Dr. Iago Galdston which graphically sets forth the many useful and ethical ways in which The Medical Information Bureau, sponsored by the New York Academy of Medicine and the Medical Society of the County of New York serves both the profession and the public. This Bureau is operated by a full-time staff consisting of an executive secretary, an assistant and a secretary. Behind the Bureau is a body of consultants and advisers numbering approximately 100 and selected by and from the two groups mentioned above.

The "credo" of the Medical Information Bureau was, at its foundation, set down in the following terms:

"From its earliest days the profession of medicine has been governed by a code of ethics which has served to maintain the lofty ideals of the followers of Aesculapius. Unhappily, this code has also served to insulate the profession against intimate contact with the public.

"Whatever may have been the forces and motives that moved the early lawmakers of medicine to instill an element of secrecy and aloofness into the governing principles of the profession, certain it is that the best interests of the physician and of the public are no longer served by this attitude. The recent and phenomenal progress of modern medicine, and particularly of preventive medicine, necessitates the development of a direct and intimate channel of communication between the practitioner and the community. This is essential, not only that the public may learn to take advantage of modern medicine, but to the end that it may be protected against the hordes of charlatans, quacks, and misguided zealots who, strange to say, thrive more than ever in this day of presumptive enlightenment.

"In appreciation of the needs of our day and society, the New York Academy of

Medicine and the Medical Society of the County of New York have established a joint Medical Information Bureau. The aims of this Bureau are to facilitate the dissemination of authentic medical information on medical and public health matters, to stem and curtail quackery and to promote a better understanding between the public and organized medicine."

The objectives of the Bureau are defined as follows:

"(1) to facilitate the dissemination of authentic information on medical and public health matters, (2) to stem and curtail quackery, and (3) to promote a better understanding between the public and organized medicine."

This Bureau has been in existence since 1928 and during this period has rendered a most valuable service to the people, the profession and the newspapers in the matter of purifying and elevating standards and of stemming and curtailing, by means of proper educative methods, the many channels through which quackery is fed to a gullible and credulous public.

In Alabama, with every reputable doctor an integral part of the State Board of Health, might we not view the Medical Association of the State of Alabama as The Medical Information Bureau for Alabama?

BUREAU OF PREVENTABLE DISEASES

D. G. Gill, M. D., Director

DIPHTHERIA AGAIN

During the past year the question of diphtheria and its control has been prominently discussed in this Journal and further discussion now must only be repetition. Certain facts, however, might well be emphasized at this, the diphtheria season.

- (1). Alabama has one of the highest death rates from diphtheria of any state in the country.
- (2). There has not been any marked decrease in this rate during the past ten years.

	Number of Deaths	Rate per 100,000
1923	206	8.5
1924	149	6.1
1925	169	6.8
1926	207	8.2
1927	249	9.8
1928	237	9.2
1929	251	9.6
1930	188	7.1
1931	205	7.6
1932	206	7.5

- (3). September, October, November, and December are the months of highest incidence, with the peak usually coming in October. Diphtheria must be particularly considered in all suspicious cases at this time of year.
- (4). The administration of toxoid or toxin-antitoxin at the proper age will eliminate this disease. Most of the cases and deaths occurring in Alabama are in the age group 1-5, hence this protection must be given before the child reaches school age.

The one-dose preparation of toxoid worked out by Dr. L. C. Havens has received the endorsement of official health agencies elsewhere as well as the approval of the State Committee of Public Health. It is available without cost to the physicians of the State through their county health department or through the nearest laboratory. It frequently takes a case of diphtheria in a community to create a demand for protection, but full advantage should be taken of such interest when aroused.

BUREAU OF VITAL STATISTICS

W. T. Fales, Sc. D., Director

SUMMARY OF VITAL STATISTICS

Alabama, First Six Months 1933

The number of births recorded for the first six months of 1933 showed a decrease of 3,476, which represents a reduction in the birth rate from 22.0 for the first six months of 1932 to 19.2 for the same period of 1933. On the whole, this reduction represents a natural decrease in the birth rate of the State. It follows a similar decrease in number of marriages during 1932 and

reflects in this way the economic depression.

Once again, the mortality for the first six months was particularly favorable. As in the case last year, the low death rate can be attributed largely to the low mortality from influenza and pneumonia. Where the combined death rate for the first six months of 1932 from these two causes was 122.9 per 100,000 population and for the same period of 1931 was 179.1, it was only 109.1 for the first half of the present year.

Tuberculosis showed a further decrease for the first six months of this year. The death rate from tuberculosis of the respiratory system was 62.8 against 72.9 for last year. The decrease in deaths from this cause was particularly marked among the colored population.

The first six months was particularly favorable for deaths from communicable diseases. Reductions were shown in deaths from typhoid fever, scarlet fever and diphtheria. In the latter case the rate was only 2.4 per 100,000, against 4.1 for the same period of 1932. There were no deaths from smallpox during the first half of this year.

Typhus fever or Brill's disease has shown a consistent increase each year since the discovery of its presence in Alabama in 1923. During the entire period it has been confined practically entirely to the southeastern counties of the State. With the gradual increase of the number of cases reported, the number of deaths has also increased. For the first six months of this year the number of cases was 136 against sixty-four during the same period of last year, and the number of deaths was eleven, against twelve for the whole of 1932. In July there were reported 133 new cases against seventeen during July 1932. With the determination in 1931 and 1932 of the transmission of endemic typhus from rat to man by means of the rat flea, *Xenopsylla cheopis*, it is evident that control can be secured only through the radical reduction in the number of rats.

It has been very encouraging to find that there has been no significant increase as yet in the death rate from pellagra. For the first six months, the rate was 12.6, against 12.3 for the same period of last year.

In the case of diseases responsible for most deaths—cancer, heart and Bright's

disease—there was little or no change in the death rates for the first six months of this year from that for the previous year. The constancy of this rate, together with a slight increase in the death rate from senility and unknown and ill-defined causes, lead one to believe that there has been no material change in the status of our registration of deaths.

The deaths from puerperal causes have shown a decrease in the rate, based upon the total population, from 17.1 per 100,000 population to 13.0. Based on 1,000 live births, the maternal death rate for the first six months was 6.8. It is thought that this reduction largely reflects the decrease in the number of mothers giving birth to babies during the period.

The deaths from external causes have shown a decrease, on the whole. It should be remembered that accidental deaths were high last year because of the tornado that struck central Alabama in March 1932. The homicide rate for the first half of this year was 21.3 against 18.5.

PROVISIONAL MORTALITY RATES,
Alabama, First Six Months 1932-1933

	Total		White		Colored	
	1933	1932	1933	1932	1933	1932
ALL CAUSES	930.8	985.8	778.8	809.4	1204.4	1303.6
Typhoid & paratyphoid fever	2.7	4.0	2.2	2.9	3.7	6.0
Typhus fever	0.8	0.3	1.0	0.5	0.4	—
Smallpox	—	0.1	—	0.1	—	0.2
Measles	1.2	0.4	1.6	0.1	0.4	0.8
Scarlet fever	0.4	1.1	0.6	1.7	—	—
Whooping cough	6.6	7.1	6.9	6.3	5.9	8.7
Diphtheria	2.4	4.1	2.3	5.2	2.6	2.3
Influenza	46.6	40.6	41.7	36.5	55.3	47.9
Poliomyelitis	0.4	0.2	0.3	0.3	0.4	—
Meningococcus meningitis	0.4	0.6	0.3	0.7	0.4	0.4
Tuberculosis of resp. syst.	62.8	72.9	36.8	39.1	109.7	133.7
Other forms of tuberculosis	6.2	6.8	2.8	4.0	12.2	11.8
Syphilis	13.9	15.1	4.1	3.1	31.7	36.8
Malaria	2.4	3.5	2.3	2.4	2.6	5.6
Other infect. & parasitic dis.	10.1	13.2	10.1	11.1	10.2	16.9
Cancer & other malignant tumors	53.8	53.8	60.6	60.7	41.5	41.5
Tumors, nonmalignant, or unspec.	3.9	4.3	2.7	3.3	5.9	6.0
Chronic rheum. & gout	1.7	2.3	1.9	2.7	1.2	1.4
Diabetes mellitus	9.0	8.0	9.6	8.6	7.8	6.8
Pellagra	12.6	12.3	9.1	8.4	19.0	19.4
Alcoholism (acute or chronic)	1.1	1.8	1.2	1.7	0.8	1.9
Other gen. dis. & chr. pois.	7.4	8.9	7.3	8.6	7.6	9.5
Loco. ataxia & gen. par. insane	3.1	2.1	3.2	1.4	2.9	3.5
Cerebral hemorrhage	55.5	58.9	49.3	53.1	66.8	69.2
Paralysis	10.6	9.9	8.5	7.7	14.3	13.8
Gth. dis. nervous syst. & organs spec. sense	13.4	17.5	12.9	15.9	14.3	20.4
Diseases of heart	119.4	112.2	114.1	106.0	128.9	123.5
Other dis. circulatory system	10.7	10.2	10.8	9.1	10.6	11.8
Bronchitis	1.7	0.1	1.8	0.1	1.4	—
Pneumonias	62.5	82.3	52.2	75.2	80.9	95.0
Oth. dis. resp. system	4.1	4.6	3.9	4.2	4.5	5.4
Diarrhea and enteritis	—	—	—	—	—	—
Under 2 years	13.7	11.9	13.4	10.5	14.3	14.2
2 years and over	5.2	6.5	5.6	6.5	4.7	6.4

Appendicitis	9.3	11.3	9.2	11.8	9.6	10.3
Dis. liver & biliary passage	6.4	7.1	7.1	7.1	5.1	7.0
Oth. dis. digest. syst.	22.5	24.1	17.3	19.4	31.9	32.6
Nephritis	77.1	81.1	66.5	66.3	96.0	107.6
Oth. dis. genito-urinary system	11.8	12.0	9.9	8.9	15.3	17.6
Puerperal septicemia	3.4	4.0	3.1	2.7	3.9	6.2
Oth. dis. puerperal state	9.6	13.1	8.2	9.9	12.2	19.0
Dis. skin, bones and org. loco.	2.4	2.4	2.9	2.6	1.4	2.1
Congenital malformations	6.9	5.7	8.1	7.6	4.9	2.5
Dis. of early infancy	42.3	47.0	40.0	46.5	46.6	47.9
Senility	14.2	13.8	10.7	10.1	20.6	20.4
Suicide	7.0	8.8	10.0	11.9	1.6	3.3
Homicide	21.3	18.5	12.1	9.3	37.8	35.1
Total accidental causes	48.3	57.4	46.8	56.5	51.1	59.1
Unknown or ill-defined causes	102.1	101.8	45.8	40.7	203.4	211.7

BUREAU OF SANITATION

G. H. Hazlehurst, Director

ROUTINE MOSQUITO CONTROL OPERATIONS USED IN MANY ALABAMA TOWNS

(1) *Time of Beginning Work.*

Mosquito production begins about May 1 and ends with the first killing frost in the fall. Control operations, therefore, are carried on during this period of time.

(2) *Direction of Work.*

The direction of the work is usually delegated to some town employee who is in position to give necessary time to the operation. Unless this man has had the necessary previous experience, he is given several days training at the beginning of the work. Upon request, the State Department of Public Health details a man for the purpose of initiating the program and giving the director necessary training.

(3) *Letter to Household.*

During the first round of inspection a letter from the mayor or county health officer is directed to the householders. In this letter the people are urged to do their part in the prevention of mosquito production. There will be some mosquitoes left if each householder does not prevent mosquitoes from breeding in and about each house. Full control can only be obtained by continued reinspection.

(4) *Division of Territory.*

The town is divided into three to six inspection and oiling districts. These districts are then worked in order each week.

(5) *Spot Map.*

Early in the season a spot map of the town is provided in the mayor's office or in that office which serves as the foreman's headquarters. On this map is shown all

actual and potential mosquito breeding places. It serves as a record for checking routine control operations.

(6) *Mosquito Station Inspections.*

At the beginning of the work, four to ten adult mosquito catching stations are established about the town. These are visited weekly and the type and number of mosquitoes found recorded. The results of these station inspections give an indication of the effectiveness of control work. The weekly findings are spotted on a graph furnished by the State Department of Public Health or one similar to it. This graph is kept in the office with the spot map. Anyone interested in the work can see at a glance from this graph the progress being made.

Identification of the type mosquitoes found in the stations serve as a key to their breeding place, to which control methods are then directed. Again, when any particular station shows an abnormally high count, special efforts at control are then carried on in the territory in which the station is located.

(7) *Complaint Map.*

A map is provided in the office for spotting *bona fide* complaints of mosquitoes. Complaints are investigated, the type of mosquito causing the complaints determined and an effort made to locate the source of trouble. As the season progresses, the complaint spot map serves generally to indicate the parts of town where special efforts at control should be carried on.

(8) *Transportation.*

While automobile transportation for the inspector and oiler is usually desirable, it is not always essential. A push cart may suffice for transporting the oil and tools.

(9) *Inspection.*

Routine inspection of all premises weekly is considered essential for complete mosquito control. However, in some instances, it is felt that appeal made to the householders will result in many keeping their premises free of mosquito breeding and the weekly inspections are omitted to reduce cost.

(10) *Organization.*

The most successful mosquito control campaigns have been well organized in the beginning. Systematized efforts are essential for complete control.

C. C. K.

CURRENT STATISTICS *PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA

	June	July	Estimated Expectancy July
Typhoid	65	157	236
Typhus	56	133	7
Malaria	184	335	480
Smallpox	4	0	28
Measles	137	115	133
Scarlet fever	37	50	39
Whooping cough	195	169	168
Diphtheria	37	46	35
Influenza	23	22	15
Mumps	38	20	26
Poliomyelitis	2	1	5
Encephalitis	4	3	2
Chickenpox	18	19	21
Tetanus	8	5	7
Tuberculosis	254	251	373
Pellagra	97	96	128
Meningitis	5	4	3
Pneumonia	67	56	56
Syphilis (private cases)	168	215	141
Chancroid (private cases)	4	1	8
Gonorrhea (private cases)	139	208	169
Ophthalmia neonatorum	2	1	2
Trachoma	0	0	0
Tularemia	0	0	1
Undulant fever	5	0	2
Dengue	0	2	1
Rabies—human cases	0	1	0
Positive animal heads	64	73	

*As reported by physicians and including deaths not reported as cases.
The Estimated Expectancy represents the median incidence of the past nine years.

PROVISIONAL MORTALITY STATISTICS Alabama, June 1933

CAUSE	Number of Deaths Registered June 1933			Annual Rate per 100,000 Population		
	White	Colored	Total	June 1933	June 1932	June 1931
ALL CAUSES	1191	1049	2240	994.3	1017.7	1077.9
Typhoid fever	8	8	16	7.1	3.1	4.5
Smallpox						
Measles	6	1	7	3.1		5.0
Scarlet fever	1		1	0.4	0.9	0.4
Whooping cough	12	7	19	8.4	12.1	5.0
Diphtheria					1.8	0.4
Influenza	18	10	28	12.4	13.5	16.3
Pneumonia, all forms	50	44	94	41.7	36.4	64.4
Poliomyelitis					0.9	0.9
Tetanus	2	4	6	2.7	1.8	3.6
Tuberculosis, all forms	50	106	156	69.2	90.9	86.6
Tuberculosis, pulmonary	44	94	138	61.3	83.7	78.0
Malaria	8	9	17	7.5	8.1	8.2
Cancer, all forms	98	32	130	57.7	63.9	60.8
Diabetes mellitus	10	8	18	8.0	9.0	8.6
Pellagra	16	21	37	16.4	18.0	24.5
Cerebral hemorrhage, apoplexy	71	58	129	57.3	58.5	61.7
Diseases of heart	173	115	288	127.8	110.2	128.3
Diarrhea and enteritis						
Under 2 years	61	37	98	43.5	29.2	37.6
2 years and over	26	12	38	16.9	9.9	13.6
Nephritis	91	78	169	75.0	85.9	100.2
Puerperal state, total	18	11	29	12.9	19.8	16.3
Puerperal septicemia	6	3	9	4.0	5.4	4.5
Congenital malformations	11	2	13	5.8	7.6	7.7
Congenital debility and other diseases of early infancy	57	50	107	47.5	53.5	51.2
Senility	27	20	47	20.9	13.9	12.2
Suicides	13	3	16	7.1	8.5	13.6
Homicides	18	37	55	24.4	25.2	24.5
Accidental burns		4	4	1.8	1.8	5.0
Accidental drownings	5	8	13	5.8	7.2	10.9
Accidental traumatism by firearms	5	1	6	2.7	0.9	2.3
Mine accidents	3	5	8	3.5	1.3	1.3
Railroad accidents	6	4	10	4.4	2.7	2.3
Automobile accidents	29	5	34	15.1	10.8	16.8
Other external causes	31	14	45	20.0	24.7	22.8
Other specified causes	197	155	352	156.2	173.2	158.7
Ill-defined and unknown causes	70	180	250	111.0	112.9	101.6

Medical News

(Secretaries of county medical societies and other physicians will confer a favor by sending for this section of the Journal items of news relating to society activities.)

The summer meeting of the Southeastern Division of the Association was held in Enterprise on July 6 under the Vice-Presidency of Dr. G. W. Williamson of Hartford. Dr. W. A. Lewis, of the host society, discussed "Some of the Main Points of the Inter-Relation of the Cardiac, Arterial, and Renal Systems with Suggestions on Treatment". "Epigastric Hernia" was dealt with by Dr. L. L. Hill, Jr., of Montgomery. Dr. M. S. Davie, Dothan, presented a paper on "Hypertension". Dr. J. N. Baker, State Health Officer, related "Some of the Problems Confronting the State Department of Health". At dinner, given by the entertaining society, the President of the Association, Dr. J. R. Garber, Birmingham, presented a paper entitled "The Physician and Citizenship".

* * *

The Bullock County Medical Society held a homecoming meeting in Union Springs, August 9. "Malaria as a Complication" was discussed by Dr. C. M. Franklin. Dr. C. Hilton Rice of Montgomery presented a paper on "The Treatment of Habit Spasms by Psychotherapy". "The Prophylaxis and Treatment of Infectious Diarrhea" was dealt with by Dr. A. A. Walker, Birmingham. Dr. J. N. Baker, State Health Officer, also addressed the gathering.

The program was concluded with a barbecue.

* * *

The regular meeting of the Houston County Medical Society for July was turned over to the Houston County Health Department for a public health meeting. This meeting was held at Porter's Fairyland with a barbecue for the doctors and their wives. After the barbecue a very interesting meeting was held with papers given by Drs. M. S. Davie of Dothan, J. B. Ryan of the United States Public Health Service, and D. G. Gill of the State Department of Health.

Dr. E. W. Goodpasture, Professor of Pathology, Vanderbilt University School of Medicine, has been made an Honorary Fellow of the Gorgas Medical Society of the University of Alabama.

* * *

The annual joint meeting of the Elmore and Tallapoosa County Medical Societies was held at Hotel Camp Dixie, on Lake Martin, July 11. Papers were read by Dr. A. E. Thomas, Montgomery, "The Conservative Treatment of Eclampsia"; Dr. J. Harold Watkins, Montgomery, "Cardiac Failure Associated with Pain"; Dr. L. H. Hamner, Camp Hill, "Abnormal Blood Pressure"; Dr. C. C. Fargason, Dadeville, "The Changing Order"; and Dr. J. E. Cameron, Eclectic, "New Uses for Old Drugs". Dr. B. C. Scarbrough, Albertville, in discussing Dr. Watkins's paper gave an interesting case report.

Dr. L. B. Allen, President of the Tallapoosa County Medical Society, presided.

At a Dutch Supper which followed, Dr. O. S. Justice acted as toastmaster.

* * *

Dr. J. N. Baker addressed the Chambers County Medical Society at Shawmut on August 8.

* * *

The Walker County Medical Society entertained at a barbecue on August 11 at the A. B. Aldridge camp on the Warrior River.

* * *

The Northeastern Division of the Association held its summer meeting at Talladega, July 11, with the Vice-President, Dr. W. M. Salter of Anniston, presiding. In addition to an address by the President of the Association, papers were contributed by Dr. J. O. Morgan, Gadsden, "Hormone Test for Pregnancy"; Dr. Louise Branscomb, Birmingham, "Hormone Therapy in Gynecology"; Dr. N. E. Sellers, Anniston, "Appendicitis as a Complication of Pregnancy"; Dr. H. R. Carter, Birmingham, "Coronary Occlusion"; and Dr. C. L. Salter, Talladega, "Report of Two Cases of Acute Pancreatitis".

Dinner was served by the host society.

Book Abstracts and Reviews

Medical State Board Examinations—Summaries and Answers: By Harold Rypins, A. B., M. D., Secretary, New York State Board of Medical Examiners; Member, National Board of Medical Examiners; Associate in Medicine, Albany Medical College; Former President, Federation of State Boards of Medical Examiners of the United States; Former Instructor in Medicine, University of Minnesota. 423 pages. Philadelphia, Montreal and London: J. B. Lippincott Company, 1933. Cloth \$4.50 net.

This work, while primarily designed to serve the needs of the recent graduate preparatory to taking "the final leap" into the sea of medicine which henceforth will constitute the scene of his life struggles, may also well serve as a sane and intelligent guide to members of the various State Examining Boards upon whom rests the important duty of passing upon the fitness or unfitness of medical applicants. The detailed technical training embraced in the curricula of all "Class A" medical colleges is now of such a uniformly high standard as to present *ipso facto* evidence of sound training in the elementary things of medicine. So true has this become as to justify members of licensing boards to shape and select their questions with the end in view of determining the applicant's ability to reason, to deduce and to apply the knowledge previously gained, rather than, parrot-like, to again reduce it to writing. This is a point which every member of licensing boards will do well to remember and one which the author, from the manner in which he handles the various topics presented in the subject matter of the book, unconsciously stresses throughout.

A perusal of the nine basic subjects covered in this work—anatomy, physiology, chemistry, bacteriology, pathology, hygiene and preventive medicine, obstetrics and gynecology, medicine and surgery—reveals that the author wishes to get over to his readers, whether students or examiners, the value of real essentials, the stripping away of the inconsequential and the importance of a clear, cogent and concise reasoning. To quote from his foreword:

"The primary interest of the examiners is not in the academic or encyclopedic content of your medical acquisition. They desire to test you for the minimum medical knowledge consistent with safe practice, and particularly, your ability to react to a medical problem intelligently. They desire to learn not so much what you actually know as whether or not you can use that knowledge clinically. Remember that the examiners assume your possession of the medical degree from a recognized medical college as presumptive evidence of four years of reasonably successful exposure to medicine, and that in general they examine you in the expectation that you will be welcomed as one of their peers."

While the circulation of a book of this nature will, of necessity, be limited, it should prove a valuable aid to those for whom it is especially designed—the candidate for licensure, the examiner and the teacher.

J. N. B.

Truth About Medicines

PROPAGANDA FOR REFORM

Alpha-Dinitrophenol.—The Council on Pharmacy and Chemistry of the American Medical Association in a preliminary report states that alpha-dinitrophenol (1:2:4) is a compound known in industry chiefly as an intermediate in the manufacture of explosives. It came into prominence in France during the World War, when it was extensively employed in the production of munitions. Numerous cases of poisoning occurred in factory workers handling the material. Fortunately, hygienic measures instituted after the source of the intoxications had been traced completely prevented further casualties. In the extensive pharmacologic scrutiny to which dinitrophenol 1:2:4 was subsequently subjected this compound was found to produce marked hyperthermia in animals; this led to death if the dosage was large enough. Cutting, Mehrtens and Tainter and their co-workers have found that the administration of dinitrophenol in proper dosage may result in acceleration of cellular metabolism, both in animals and in man, without apparent evidence of deleterious effect. Dinitrophenol appears, in some conditions, to have advantages over thyroxine for this purpose. The authors realize, of course, that their very extensive investigations have not yet ruled out beyond a reasonable margin of doubt the possibility of remote toxic effects in the clinical use of dinitrophenol. Their conclusion, in which the Council concurs, is therefore reproduced herewith: "There are limitations to and possible dangers from the use of the drug clinically. It should be used only under strictly controlled conditions." The product is at present available on the market for chemical use only and is not sold as a drug. The Council has therefore deferred further consideration of this preparation until more evidence is adduced for its therapeutic usefulness. (Jour. A. M. A., July 15, 1933, p. 210.)

Hosal and Bromhosal Not Acceptable for N. N. R.—The Council on Pharmacy and Chemistry reports that Hosal and Bromhosal are products marketed by the Abbott Laboratories as "Two Substitutes for Table Salt where Sodium Chloride is contra-indi-

cated." No adequate statement of composition is given in the advertising or on the package. The only analysis available appears to be that given for Hosal by von den Velden (The Low Salt Diet, Clin. Med. & Surg. 39: 257 (April) 1932) as follows: Calcium 11.7%; sodium 15.3%; magnesium, traces; poly-amino-acids; low fatty acids, amounts not specified. Concerning the composition of Bromhosal, von den Velden states: "Bromhosal is a 60 per cent bromine preparation on the basis of Hosal, composed of calcium-sodium double salts of poly-amino-acids on the one side and low fatty acids on the other." The advertising emphasizes the idea that "It (Hosal) contains only a minute quantity of sodium, and is free from sodium-chloride." It contains 39.2 per cent of the sodium contained in table salt; hardly to be spoken of as "a minute quantity". The misleading statement must be regarded as harmful in view of the well established fact that sodium, rather than chlorine, is important for the production of edema. From organoleptic tests there was agreement that the flavor imparted to foods by Hosal was distinctly different from that of table salt and that the flavor was unpleasant, resembling somewhat the flavor of meat extracts. The advertising circular states that "Bromhosal consists of 60 per cent bromine chemically combined with Hosal. . . ." The misleading statements with regard to the absence of sodium chloride apply, therefore, to both products. Bromhosal was found to be definitely more palatable and saltier than Hosal. It was pointed out, however, that the product is proposed not as a salt substitute, but as a medication. It is offered as a substitute for the official bromide preparations such as sodium or potassium bromide, which cost far less, without any evidence of advantage over these salts. The Council declared Hosal unacceptable for New and Nonofficial Remedies because it is a preparation of semisecret composition marketed with misleading and unwarranted claims; it declared Bromhosal unacceptable because it is a preparation of semisecret composition marketed with misleading and unwarranted claims as a potentially dangerous substitute for bromide therapy with the entirely adequate official preparations. (Jour. A. M. A., July 22, 1933, p. 280.)

"Diabesan" Alias "Fermogen".—As long ago as 1925 the Council published a report on "Diabesan", a preparation stated to contain "the trypsin of dead yeast cells" and claimed to be "indicated in all cases of diabetes and glycosuria." The evidence for the value of this dried yeast preparation appeared to consist solely of a paper written by one A. H. Werner, the president of the Solosan Company, which exploited "Diabesan". The Council found the claims for Diabesan to be unsupported by acceptable evidence and not in harmony with accepted facts. In an advertising circular for "Fermogen" the "directions" and many of the testimonial letters are word for word the same as those contained in an advertising circular for Diabesan, except that the name "Diabesan" is replaced by "Fermogen". Further, it is brought out that the president of the Sano Laboratories, Inc., which markets Fermogen, is none other than one A. H. Werner. The conclusion that "Fermogen" is only "Diabesan" under another name appears so obvious as to need no further comment. (Jour. A. M. A., July 29, 1933, p. 389.)

Rex-Orcin Not Acceptable for N. N. R.—The Council on Pharmacy and Chemistry reports that Rex-Orcin is the proprietary name under which the Amp Research Laboratories, Corona, Long Island, N. Y., market a preparation for treatment of the scalp, stated to have the following composition: "Tannic acid U. S. P. 0.5%, Salicylic Acid U. S. P. 1.0%, Castor Oil U. S. P. 24.5%, Euresol (Mono acetate resorcinol) 5.0%, Ethyl alcohol 69.0%, Perfumed to render suitable for use." The product appears to be only another one of the many hundreds of proprietary preparations on the market for treatment of the scalp. There is nothing new about the formula. Rex-Orcin is offered as "a stimulating and effective antiseptic". If it is rubbed in hard enough it might cause a rubefacient action on the scalp. No evidence is offered to show that it is an "effective antiseptic for the treatment of hair and scalp". Just what is meant by this last statement only the manufacturers can say. The Council declared Rex-Orcin unacceptable for New and Nonofficial Remedies because it is an unnecessarily complex and unscientific mixture marketed under an unacceptable pro-

prietary name, with unwarranted therapeutic claims, and in such a manner as to lead to its ill advised use by the public. (Jour. A. M. A., July 22, 1933, p. 281.)

Oyloff Dry Shampoo.—In an advertisement published in the Woman's Home Companion for January, 1933, the following claims are made for "Oyloff Dry Shampoo" put out by the Godefroy Manufacturing Company of St. Louis: "It's amazing how Oyloff Dry Shampoo removes all oil and dirt, cleans the scalp and reveals the silky luster, beauty and romance of your hair"; "Just apply Oyloff, let it dry, then brush thoroughly. You can see the oil and dirt come tumbling out"; "Try it once and you'll thrill over it, too". A bottle of Oyloff was purchased on the open market and \$1.05 had to be paid for it. It was turned over to the A. M. A. Chemical Laboratory with the request that it be analyzed. From the chemists' report we learn that this "amazing" product that reveals the "romance of your hair" and that will "thrill you is, essentially, a pinch of salt in five ounces of water. Paying \$1.05 for five ounces of salt water would seem, under present economic conditions, to furnish a text for a discussion on certain phases of modern business. (Jour. A. M. A., July 29, 1933, p. 386.)

The Claim "Digests Starch" for Foods Containing Diastatically Active Malt or Malt Extract.—The Committee on Foods reports that such claims as "digests starch", "aids digestion", "digests other foods", "digests the starch of other foods", "contains natural digestive elements", and equivalent claims frequently accompany foods containing diastatically active malt or malt extract. It is not true that foods containing diastase "digest other foods". The diastase is incapable of digesting proteins or fats, important components of most foods. Diastatically active malt or malt extract products have starch digestive properties, but they are of no significance for digesting starch or for aiding the normal processes of starch digestion. Starch digestive claims in advertising for this type of foods usually have therapeutic or medicinal implications which lead to self-medication and are unwarranted; they promote misleading advertising. (Jour. A. M. A., July 22, 1933, p. 281.)

Miscellany

ADVERTISER'S NOTE

Mead Johnson & Co. are now marketing Mead's Cereal in dried pre-cooked form, ready to serve, under the name of Pabulum. This product combines all of the outstanding mineral and vitamin advantages of Mead's Cereal with great ease of preparation.

All the mother has to do to prepare Pabulum is to measure the prescribed amount directly into the baby's cereal bowl and add previously boiled milk, water, or milk-and-water, stirring with a fork. It may be served hot or cold and for older children and adults cream, salt and sugar may be added as desired.

Mothers will cooperate with physicians better in the feeding of their babies because Pabulum is so easy to prepare. It gives them the extra hour's rest in the morning and saves bending their backs over a hot kitchen stove in summer. Please send for samples to Mead Johnson & Company, Evansville, Indiana.

NEW AND NONOFFICIAL REMEDIES

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

Erysipelas Streptococcus Antitoxin Refined and Concentrated—P. D. & Co.—This product (New and Nonofficial Remedies, 1933, p. 364) is also marketed in packages of one piston syringe containing 20 cc. Parke, Davis & Co., Detroit.

Sal Ethyl Carbonate.—The carbonic acid ester of ethyl salicylate.—Salicylic ethyl ester carbonate.— $O:C(OC_6H_4.COOC_2H_5)_2$. Sal-ethyl carbonate provides the antipyretic and analgesic effects of the salicylates. It

is relatively insoluble in water and in the acid secretions of the stomach. For cases requiring a rapid analgesic and antipyretic effect rather than salicylate saturation, tablets sal-ethyl carbonate with amidopyrine are supplied. The product is supplied in the form of Compressed Tablets Sal-Ethyl Carbonate, 5 grs., Compressed Tablets Sal-Ethyl Carbonate with Amidopyrine and Tablet Triturates Sal-Ethyl Carbonate, 1 gr. Parke, Davis & Co., Detroit.

Sterile Ampoules Procaine Hydrochloride Crystals for Spinal Anesthesia, 100 mg.—Each ampoule contains procaine-Abbott (New and Nonofficial Remedies, 1933, p. 58), 100 mg. Abbott Laboratories, North Chicago, Ill.

Sterile Ampoules Procaine Hydrochloride Crystals for Spinal Anesthesia, 120 mg.—Each ampoule contains procaine-Abbott (New and Nonofficial Remedies, 1933, p. 58), 120 mg. Abbott Laboratories, North Chicago, Ill.

Sterile Ampoules Procaine Hydrochloride Crystals for Spinal Anesthesia, 150 mg.—Each ampoule contains procaine-Abbott (New and Nonofficial Remedies, 1933, p. 58), 150 mg. Abbott Laboratories, North Chicago, Ill.

Sterile Ampoules Procaine Hydrochloride Crystals for Spinal Anesthesia, 200 mg.—Each ampoule contains procaine-Abbott (New and Nonofficial Remedies, 1933, p. 58), 200 mg. Abbott Laboratories, North Chicago, Ill. (Jour. A. M. A., July 8, 1933, p. 123.)

Solution Colloidal Mercury Sulphide-Hille.—A colloidal 2 per cent solution of mercuric sulphide in water, stabilized with a hydrolyzed protein substance and preserved with 0.2 per cent of tricresol. It is proposed for intramuscular injection in the treatment of syphilis. Hille Laboratories, Inc., Chicago.

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THE MANAGEMENT OF FRACTURES OF THE FACIAL BONES*

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The ever increasing speed at which man now travels has multiplied the number of fractures of the face. The sudden and permanent stop of a rapidly moving vehicle, as in a wreck, throws the occupants forward and they may strike their faces against one of the fixed parts of the vehicle. Our cases have included injuries sustained in many fashions, ranging from a newspaper boy's fight to a nose dive of an aeroplane. The management of fractures involving the paranasal sinuses is similar to the surgical procedures followed in radical sinus surgery. In fact, the most common complication of these fractures is sinusitis. Most fractures of the facial bones, exclusive of the simple nasal bone fractures, extend into the maxillary, frontal or ethmoidal sinus. The sinus involved fills with blood, which readily becomes infected. The basis of treatment is the replacement of the bony fragments and the drainage of the sinus entered. These measures will restore the features.

The face is made up of an upper and lower jaw. The upper jaw may be likened to two churches with steeples having two keystones interposed between them. The superior maxillae with their nasal processes are the churches and the nasal bones are the keystones. The malar bones are the lateral supports. This formation is loosely attached to the skull and capable of withstanding great force exerted on it in a straight direction, but very vulnerable to forces from the side or from below. Explosion which enters the nose or mouth readily displaces the facial bones from the skull without fracturing the skull. The lower jaw can with-

stand blows of great force from the side or below without fracturing, whereas a blow of equal force from in front may fracture the lower jaw. The majority of displacements are at the site of sutures.

The variety of fractures are:

1. Greenstick—as in children.
2. Simple—slight nasal fractures.
3. Compound—fracture of the frontal bone.
4. Comminuted—fractures of the anterior antral wall.
5. Impacted—as seen in fractures of the zygomatic process.
6. Depressed—as seen about the outer border of the orbit and malar bone.

EXTERNAL NOSE

The anterior position of the nose exposes it to injury and deformities of it are noticeable and detracting. Individuals with badly shaped noses become conscious of their deformity and many suffer inferiority complexes because they are constantly accusing their listeners of observing their nasal blemish, instead of being attentive to their discourse. The external nose consists of a bony and a cartilaginous portion. The attachment of the cartilages to the bony base may be easily separated. The re-attachment is maintained in a good position by a light intranasal pack for two days and a light adhesive dressing externally for a week or ten days. The fractures of the bony external nose are the most frequent of the facial fractures. The deformity depends on the line of force which was applied. When the force is lateral, the approximate nasal bone is displaced under its mate and, if the force was sufficient, the nasal process of the superior maxilla is cracked and depressed, the septum being deflected.

The correction demands the application of the law of physics—"two objects cannot occupy the same position in space at the

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same time". The depressed nasal process and nasal bone are first elevated, then force is applied to the opposite side of the nose by a blow of sufficient power to knock the displaced bones into their normal position. A wooden protector for the nose is used as a guard and a small metal nasal hammer as the instrument of force. If the case is seen early, this can be accomplished under local anesthesia, but it is best to administer a general anesthetic as better results are obtained. The best outer dressing is made of Kerr's dental wax which will mold to fit the nose. It is fixed with adhesive plaster to the forehead and several adhesive strips over the nose. Metal external splints or mechanical appliances may be used.

There is a variety of nasal fracture, the result of force directed from in front, which depresses inwardly both nasal bones and rotates outwardly one or both nasal processes of the two superior maxillae. This injury is easily produced by "brass knucks". The deformity is characteristic. The nose is very broad, being spread all over the face. The bridge is sunken. On palpation the nasal process of either or both maxillae will be found to conform with the above description. The correction of this fracture requires a partial open operation. An incision is made within the nose to expose the nasal process. With a small saw, the process is sawed through along its base, care being taken not to injure the contents of the orbit or the lachrymal apparatus. The nasal bones are elevated by force. At times they have to be rocked free of their impaction into the frontal bone. A sharp blow with force directed laterally will rotate the nasal process toward the median line. This procedure reduces the broadened base of the nose. The septum deflection will require a submucous resection to release the parts of the fracture that are old or to improve the breathing space. The nose is packed and a mechanical appliance is applied to hold the process in position. The administration of calcium will aid in the control of the swelling.

I have seen but once in private practice the opposite deformity, that is, an outward displacement of the nasal bones. This occurred in a young instructor of a Girl Scout camp. A delayed explosion of a bomb caught her while inspecting the dud. The

force of the explosion struck her from below and went up her nasal passages and blew out the front of her nose. Her deformity was like an exploded firecracker. Our nasal problem here was to depress the nasal bones and to rotate inwardly the nasal processes. There was considerable loss of the cartilaginous portion and several operations were necessary to rebuild her nasal vestibules.

PRE-EXISTING DEFORMITIES

Pre-existing deformities can be corrected if care is given the setting of the new fracture. Many noses are of better shape after a proper reduction than they were before the injury.

MALAR BONES

Blows received in fighting, falling or being forcibly thrown forward during a collision usually land on the malar prominence, which is easily displaced. The malar bone may be displaced forward, backward, inward or outward, and these displacements can be readily felt on palpation. In any event its articulations are severed. The bone comprising the external and posterior surfaces of the superior maxilla is thinner than that of the malar process and crushes after the fashion of an egg-shell. At times this irregular fracture will start at the inferior margin of the orbit and circle round the base of the malar process, ending at the junction of the posterior wall and the palate bone. This type of injury tears the antral membrane and its cavity fills with blood.

A roentgenogram of a typical case will present a cloudy antrum on the injured side and an inward or outward rotation of the malar bone, with a change in the transverse diameter of the corresponding orbit.

A study of the normal orbit in the routine posteroanterior sinus film will show a line in the outer third made by the junction of the outer orbital wall and the skull. This line bears a constant relationship to the outer rim of the orbit and may be used to determine whether or not the malar bone has been displaced. The transverse diameter of the orbit is altered in these fractures, being increased in case of outward displacement and decreased in crushing injuries in which the malar bone is rotated

inwardly. This relationship and diameter are controls, available for use in determining the correct position of the parts after the resetting of the fractures.

The malar bone and the firm bone composing the malar process of the superior maxilla are displaced in the direction of the force. The articulations of the malar bone give way with a resulting separation of it from the frontal bone, the temporal bone and the superior maxilla. At times the fracture extends forward into the ethmoidal cells. These cases present a typical deformity, the malar region being depressed.

Gill has suggested the use of special forceps similar to large towel forceps to reduce malar displacements. The bone is grasped through the skin and traction is applied with palpation as a guide. If successful, this method is safe and simple and leaves no scar, and the absence of an open wound reduces the possibility of infection. If the antral wall is badly depressed, the force exerted to replace the fragments must be intra-antral. A very simple method is to make a naso-antral window under the inferior turbinate and insert a number seven (7) Ritter sound. With one hand external for palpation, the sound can be guided in the elevation of the fragments into their places. A rubber tube passed through the window into the antrum will serve for drainage and, by anchoring it into the nasal vestibule, will serve as a prop to hold up the depressed malar process. If the anterior wall is badly comminuted, I prefer doing an open operation. The usual buccal approach of the antrum is made and the fragments are studied. Those which can be retained are replaced into their proper position and the others removed. The muscular attachments to the fragments are capable of preventing their free manipulation and at times have to be separated before a satisfactory reduction can be obtained. Packing is seldom needed but drainage should be maintained.

A blow struck with horizontal force against the front of the upper jaw will produce a transverse fracture of the superior maxilla and at times inflicts an injury to both maxillae. This fracture presents a characteristic change in the features of the person injured: the upper teeth drop down on the lower jaw elongating the features,

producing the so-called "horse face". At times this fracture extends into the nose and mouth. One of my patients suffered such an accident by having his head jammed between the floor of a freight elevator and a half-gate. The ramus of the inferior maxilla may sustain a sudden strain and often snaps, with an added downward displacement of the lower teeth. These cases demand immediate reduction, care being used to obtain a good apposition of the teeth. The lower jaw fracture should be reduced and anchored in position. These fractures are seldom single and each case is a rule unto itself, but immobilization should be started to a solid base. The skull cap can be encased in plaster, and supports anchored into the plaster. From these fixed supports, other supports or appliances should extend to the fractured parts. If there are multiple fractures involving the upper and lower jaws, it is necessary to wire the jaws in position. This is important to assure a free and unlimited movement of the lower jaw after the fractures have healed.

I saw a man who had a locked jaw due to the neglect of not having the alveolar processes slid forward into their natural position, and the resulting vicious union locked the lower jaw. When first seen by me, he could separate his gums less than an inch. I had to separate the old fracture and displace forward the upper alveolar processes and hard palate. Unfortunately, in this case, the ramus of the jaw on the left side had been fractured at the time of the injury and, being unrecognized, had healed in a bad position, leaving him with a limited motion of the lower jaw.

The after-care of the open case is the same as after a radical antral operation. The patient should be instructed to report back whenever he contracts a head cold, and the local condition should be treated to avoid a sinus infection. These sinuses have sustained a permanent injury and are now more subject to infection than before the accident. Furthermore, the infection readily escapes through into the soft tissues and adequate drainage should be maintained. If there has been a through and through wound of the cheek, it is best to close tight the mucous membrane and drain the skin wound.

Roberts has suggested the elevation of the depressed malar bone by the use of an instrument like a screw porte. Through a small skin incision the malar bone is bored into and with traction the bone is elevated into place. Gillies uses for this same deformity, an elevator which he passes down under the depressed bone and elevates the fragments. His incision is made in the skin at the hair line and dissected down through the temporal fascia.

ZYGOMATIC FRACTURES

These same manipulations are applicable to the depressed fractures of the zygomatic arch. Matas many years ago suggested an unique reduction of zygomatic fractures by passing a piece of silver wire from above under the depressed bone and out again below the arch. Traction on the wire reduces the fracture. If necessary the wire can be fixed to an external support in cases that tend to recur.

FRONTAL SINUS

Perforating fractures are more common in frontal sinus injuries than in maxillary fractures. It requires force and velocity to penetrate the thick outer wall of the frontal sinus and fortunately its thin inferior surface is protected. The management of the frontal sinus fracture depends on whether the fracture involves the outer and inner walls or just the outer wall. If the fracture does not include an injury to the inner wall, drainage by the natural route through the nasofrontal duct will suffice. The external wound should be cleansed and all loose bone removed. It may be closed with minimum drainage. The bony wall is readily palpated and any displacement easily adjusted. It is seldom necessary to enlarge the soft tissue opening to reduce these fractures. The nasal membrane is entitled to the same attention as during an acute frontal sinusitis to secure free drainage of the sinus by way of the frontal duct.

Should the frontal duct prove inadequate, the drainage will back out through the wound. This promptly becomes evident. When the inner or cranial wall is injured, an open inspection with external drainage is preferred by most surgeons. The wound through the outer wall is enlarged and sufficient membrane is stripped off the inner

wall to expose the fracture of the inner table. If the bone is depressed it should be elevated and, should there be an aperture in the inner wall, it may be enlarged to expose the dura. External drainage is continued through a rubber tube until the discharge has ceased. If the dura is torn, it is mended; for this some surgeons use "dead dura" or fascia lata. Every effort should be made to prevent the frontal sinus mucous membrane from invaginating into the fracture, as there is great danger that there will remain a potential fissure through which future infections may penetrate into the cranial cavity.

Severe blows exerted in a glancing direction from above on to the forehead or from the side striking the under surface of the malar process will separate the face from the skull. The line of fracture often extends across the anterior wall of both frontal sinuses and in one of our cases it was necessary to wire in position the anterior wall of the right frontal sinus to the skull and to wire the outer angle of the orbital rim to the outer wall of the orbit.

ETHMOID CELLS

Perforated wounds, such as made by bullets, through the orbit often penetrate into the ethmoid cells. Their management should include thorough cleansing of the external wound and the nasal cavities. The majority of these wounds heal readily with little or no deformity. Occasionally they will be followed by adhesions along the tract of the bullet within the nose, or a small shot may lodge in the ethmoid mass.

SPHENOIDAL SINUS

Fractures involving the sphenoidal sinus are fortunately rare, but their care should be along the same lines of common sense as in ethmoidal fractures.

BIBLIOGRAPHY

- Gill, W. D.: *Fractures About the Orbit*, South. M. J. 21: 527 (July) 1928.
 Naftzger, J. B.: *Fractures of the Facial Bones Involving the Nasal Accessory Sinuses*, Tr. 34, Annual Meeting Am. Laryng. Rhin. & Otol. Soc., 1928, pp. 383-94.
 Roberts, S. E.: *Ann. Otol. Rhinol. and Laryngol.*, 1928, 37, 826.
 Gillies, H. D.: *British Jour. Surg.*, 1927, 14, 651.
 Matas, R.: *New Orleans M. and S. J.*, September 1896.

THE CLINICAL SIGNIFICANCE OF HEMATURIA*

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A discussion of hematuria brings to mind the fundamentals of urology. It may be a time-worn subject. However, as the program of the session has been planned so as to include problems of the every-day type it may not be amiss to emphasize again hematuria's great clinical importance.

The presence of blood in the urine, either gross or microscopic, is practically always indicative of some pathologic condition in the urinary tract, a condition that is oftentimes of a most serious nature. Valuable time is lost and the patient thereby robbed of his chance of cure by delay in sending him to a competent urologist for thorough investigation. When pain is a predominant accompanying symptom, the patient himself will not fail to take the initiative and demand proper relief; however, when the hematuria is painless, it is largely his physician's responsibility to impress upon him the necessity for immediate accurate diagnosis. The presence of an occasional red blood cell or pus cell in a specimen of urine may not be indicative of trouble that would require a complete urologic examination, especially when there is no history referable to the urogenital tract. However it should be always borne in mind that advanced disease conditions often manifest themselves in trivial ways. The persistent presence of even a few red cells should always arouse suspicion; their discovery should direct that a complete urologic examination be advised. Many of the pathologic conditions which cause the presence of blood in urine also produce varying amounts of pus. It is very important to identify both types of cell in each specimen examined.

Blood in the urine may come from any part of the urinary tract—from the urethral meatus to the kidney. In collecting a specimen of urine from a female patient it is always necessary to exclude contamination by vaginal secretion or menstrual blood. Regardless of how clear a given specimen may appear it should never be dis-

carded without microscopic examination, and especial attention should be given to the sediment if it has been permitted to stand in the container. In our warm climate bacterial decomposition rapidly occurs and the specimen is rendered valueless. Only a recent specimen should be examined, or one that has been properly preserved in the ice box or by the addition of some suitable chemical agent such as a few boric acid crystals. It has always seemed strange to me that insurance companies do not require a microscopic examination of the urine of every applicant as a routine procedure. It is certainly just as important as examination for albumin or sugar.

By far the most common causes of hematuria are (1) tumor, (2) infection of the urogenital tract, (3) urolithiasis, and (4) tuberculosis.

The bleeding caused by a tumor is usually intermittent. Many months may elapse between attacks and the amount of blood passed at any one time may be small. Between such attacks the urine may be entirely free from cellular elements; or the hemorrhage may be severe and protracted and completely exsanguinate the patient. In the absence of any leading symptoms such as "clot colic", caused by the passage of clotted blood from the kidney through the ureter, or the presence of a palpable tumor, it is quite impossible to surmise the origin of the bleeding from the gross appearance of the urine. True, blood from bladder tumors is more likely to produce large clots that are passed with difficulty but this is by no means pathognomonic. At times even blood from the kidney may settle into the base of the bladder and appear as a terminal gross hematuria.

Over ninety per cent of all bladder tumors are papillary new growths. Some of these are not malignant but all are potentially so. Practically all of the sessile and infiltrating epithelial bladder tumors are malignant. As Burnam forcefully declares, in no field of cancer work does the importance of seeing these cases early and treating them efficiently stand out more strikingly than in bladder tumors. Proper electro-coagulation of an early papilloma often nips a potential carcinoma in the bud. Papillary epitheliomas of the renal pelvis often give rise to secondary implantations

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in the bladder and such implantations are usually multiple. In these cases it is of utmost importance not to neglect careful investigation of the kidney pelvis also.

About twenty per cent of patients with prostatic hypertrophy give a history of hematuria in which there is no associated bladder stone. In some of these cases no doubt trauma, caused by self-catheterization, plays a part. Bleeding from carcinoma of the prostate is usually a late symptom.

In addition to tenesmus and frequency, an acute attack of pyelonephritis (pyelitis) may be initiated by gross hematuria before many pus cells can be found in the urine. This is comparable to the acute hyperemic stage of the familiar skin furuncle.

Next to pain, hematuria is the second most important symptom of urolithiasis. It is usually intermittent and very rarely of severe degree. Gross hematuria in such conditions usually occurs during or following colic and is caused by traumatism of the moving rough stone. Enormous "silent" stones may occur, however, in the kidneys of patients whose urine is entirely negative. I have seen a number of patients with ureteral stones whose urine persistently showed the presence of red cells but who gave only a vague history of colic or pain or no history of pain at all.

Hematuria is a fairly constant finding in renal tuberculosis. Oftentimes it is intermittent and not gross in character. If the lesion is a small one with only slight necrosis, it is difficult to diagnose by means of the pyelogram. Staining of the urinary sediment for the acid-fast bacillus and inoculation of a guinea-pig should be done in all suspected cases. In ulcerative tuberculous cystitis, the frequency and the dysuria are extreme.

If possible, it is most important that the urologist cystoscope the patient during an attack of hematuria as it is then possible to determine far more easily the source of bleeding.

The accompanying chart, somewhat similar to those previously presented by Eisen-drath, Young and others, attempts to show in a concise and graphic manner the various anatomic locations from which hemorrhage may occur and the more usual causa-

tive pathologic conditions occurring in these locations.

KIDNEY

Tumors

Hypernephroma — malignant nephroma — "The" typical tumor of middle or advanced age
 Carcinoma—papillary and squamous cell (pelvis)
 —often associated with stone
 Adenocarcinoma (uriniferous tubules)
 Embryonal adenosarcoma—Wilms' tumor
 Polycystic kidneys
 Hemorrhagic cysts—malignant
 Hemangiomas—rare
 Benign papillomas
 Secondary metastatic tumors

Stone

Acute and Chronic Nephritis

Infarcts or focal nephritis
 Essential hematuria
 Poisons—phenol, bichloride, etc.
 Drugs—arsphenamine, mercury, ether anesthesia, hexamethylene, etc.
 Acute infectious diseases—as typhoid, malaria, etc., or even the common cold, caused either by irritation of toxins excreted or direct active renal inflammation

Acute and Chronic Pyelitis—Pyelonephritis

Pyelitis granularis

Tuberculosis

Trauma

Hydronephrosis—especially the intermittent type

Constitutional Causes

Hemophilia, purpura, leukemia, pernicious anemia

Animal Parasites

Echinococcus, Distomum hematobium, Filaria sanguinis hominis (hematochyluria)

URETER

Stone

Inflammation—Acute and Chronic

Pyelonephritic type
 Tuberculous
 Stricture—Hunner
 Peri-ureteral—appendicitis

Tumors

Rare. In general, those giving rise to hematuria are the same type as those found in the renal pelvis: papillomata—benign and malignant; squamous cell epithelioma; sarcoma

Trauma

External violence
 Recent instrumentation

BLADDER

Tumors

Those causing hematuria are practically all epithelial new growths; papillomata—benign and malignant (95%); squamous cell carcinoma; adeno-carcinoma (3%); secondary tumors—implants from renal pelvis papillomata or extension from contiguous structures; sarcoma

Stone
Foreign bodies
Inflammation—Acute and Chronic
Ulcerative cystitis
Varicosities
Pan-Mural Fibrosis—Hunner ulcer

Trauma
Sudden emptying of overdistended bladder; external injury as puncture or rupture

Animal Parasites
Distomum

PROSTATE AND PROSTATIC URETHRA

Inflammation—Acute and Chronic
Tumors
Benign—hypertrophy—fibro-adenoma
Adenocarcinoma
Papilloma—often of verumontanum

Varicosities

Tuberculosis

Excessive Venery

URETHRA

Inflammation—Acute and Chronic
Trauma
Tumors
Papillomata
Angioma
Squamous cell carcinoma—especially in area of strictures
Adenocarcinoma—Cowper's gland
Inflammatory tumors: caruncle, luetic gummata; intraurethral chancre; chancroid.
Malingering
Narcotic addicts
Psychoneurotics

CONCLUSIONS

Hematuria is a symptom, not a disease. It is usually symptomatic of the existence of some serious condition of the urogenital tract. The amount of blood passed is not directly indicative of the seriousness of this condition.

Delay in thorough investigation by a competent urologist is always to be deplored. It is rare that careful study will not reveal the source of the bleeding.

If possible, cystoscopy should be performed at the time bleeding occurs as this will materially aid the examiner in determining the source of the bleeding.

Data secured from a single cystoscopic examination may be insufficient for an ac-

curate diagnosis. Male patients usually dread cystoscopy and are inclined not to return for a second seance. It is imperative that full cooperation of all parties concerned be secured. Sacral anesthesia has robbed cystoscopy of its greatest terrors.

REFERENCES

- Burnam, Curtis F.: *South. M. J.* 26 (Feb.) 1933.
Hagar, B. H. and Braasch, William: *Lewis' Practice of Surgery*, Vol. 8.
Eisendrath: *Ibid.*
Kaufman: *Text-Book of Pathology*.
Young, H. H.: *Text-Book of Urology*
Frazer, E. B.: *City Hospital Bulletin*, Mobile, July 1931.
Crosbie, A. H.: *Urologic and Cutaneous Review*, 28, 1923.

DISCUSSION

Dr. H. S. Bruce (Opelika): I do not think I can add anything of special value to Dr. Frazer's paper. However, there are some points that should be emphasized. One of these is the importance of an absolutely thorough urinary examination. As an example I shall relate an experience that occurred in my practice. Some three years ago I was called to see a boy of six. I thought he had appendicitis but the pain was in his kidney. X-ray examination revealed a small stone in the right ureter and a stag-horn like mass in the left kidney. Two years before, our laboratory technician, in making an analysis of this boy's urine, found an occasional red blood cell and numerous crystals of cystine—diagnosis, the rare condition of cystinuria.

On a limited protein diet, the patient continued for two years without outward physical signs. He had no pain; if we wait until there is pain, it may be too late to do anything. The stone was removed from the ureter and afterwards we found other smaller ones forming. On improvement in his physical condition, the large kidney stone and twenty-one small ones were removed. During the entire time he had not had enough pain to complain of.

Taking into consideration the fact that cystinuria frequently is familial, we x-rayed the three other children but found no stones. Urinalysis, however, revealed cystinuria in the case of two of them. It is possible that a strict alkaline treatment might prevent the production of these stones.

Doctor Frazer spoke of hemorrhage. Hemorrhage is absent from these cases of cystinuria without lithiasis. If a hemorrhage is waited for, you will be misled. During the entire course of this boy's affliction—I am sure for two years—and until the formation of stones, he had no more than an occasional red blood cell. He has returned to practically normal health—yet he has small stones, cystinuria, and an occasional blood cell.

In the other children we are trying to obviate the formation of stones through alkalization. In the case of the patient he has to have in addition an occasional pelvic wash.

Some weeks ago I discussed with Dr. Cabot of Atlanta the possibility of the regeneration at times of a small portion of traumatized kidney. His experience was convincing as to the correctness of my observation. However, he does not believe much in the so-called dead kidney and therefore saves kidney substance wherever he can.

I am getting away from the subject; in closing I want to impress on you again the importance of a thorough urologic examination.

Dr. J. G. Bedsole (Jackson): When I was asked to discuss this paper and accepted, I recalled that some years ago I read to this Association a paper on malarial hemoglobinuria. It is difficult to distinguish between hemoglobinuria and hematuria. At the time of my presentation I developed the fact that when the tubes of Henley are involved we get both.

Dr. Frazer has directed our attention to the possibility of hematuria from certain drugs. I want to include turpentine. Just recently I was called to see a woman, three-months pregnant, who told me, after much persuasion, that she had taken a teaspoonful of turpentine. She had a very severe hemorrhage. I have found hematuria quite frequently in negroes who have taken turpentine for gonorrhea.

Drugs must be considered always in attempting to determine the cause of hematuria.

Dr. L. L. Hill, Jr. (Montgomery): I have enjoyed Doctor Frazer's paper. He has rendered us a valuable service in reviewing one of the most important if not the most important symptom in urology.

If I were to pick out a point in his paper as being the most significant, I think I would emphasize the statement he made that hematuria is a symptom and not a disease. Because of the possible grave significance, a patient with hematuria should always be carefully examined until a correct diagnosis can be made. Hematuria is the first symptom in more than half of the cases of renal tumor in the adult and often is the only symptom for many months. If we are to justify our constant warnings to the laity, that the salvation of a patient with cancer is early diagnosis and treatment, we certainly must always carefully examine a patient with hematuria until a correct diagnosis is made and satisfactory treatment can be instituted.

Fractures and Dislocations of the Tarsal Bones—

The keynote to a successful solution of the problems presented by these injuries is, first, accurate and early diagnosis; second, reduction of bony deformity when possible; and third, the recognition of irreparable damage when it exists, and the treatment of this according to the orthopedic principles of arthrodesis in case of the involvement of one of the tarsal articulations and of astragalectomy properly performed when preservation of the astragalus is no longer advisable.—*Wilson, South. M. J., October 1933.*

A TWO-YEAR STUDY OF MATERNAL MORTALITY IN BIRMINGHAM AND JEFFERSON COUNTY*

By

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Maternal mortality has drawn considerable attention in late years among medical and related groups because of two important facts. First, maternal mortality rates are high; second, these rates have remained persistently high for the past twenty years in spite of the fact that the leading causes of death (sepsis, toxemia, and hemorrhage) are, in a large measure, preventable. There has not been the declining mortality which apparently should follow improved facilities and methods for the care and management of obstetric cases.

It behooves us, therefore, to review the whole situation occasionally in an effort to seek its whys and wherefores, and to place responsibility in order that programs aimed at reducing the risks of childbirth may be directed to produce the best results.

Reports¹ of the Bureau of the Census for 1929 give Alabama the second highest maternal mortality rate of the 46 states in the registration area. This rate of 9.9 was exceeded only by South Carolina (11.4) and equaled only by Louisiana (9.9). For the same year Birmingham had the third highest rate (14.4) among the 89 large cities of this country, a rate that was exceeded only by Memphis (16.0) and Nashville (14.7).

Two years ago we began a study to determine whether there were any circumstances peculiar to Birmingham which might account for such an unfavorable report; and we hope to extend this study over a five-year period. The data presented here constitute a preliminary report based on 130 maternal deaths, 16,746 live births, and 816 stillbirths occurring in Jefferson County during 1931 and 1932. Clinical histories were obtained for all the 130 maternal deaths, and for 28 deaths which were classified as non-maternal on the basis of additional information. Except where complete hospital records were available these histo-

*Read before the Jefferson County Medical Society, June 5, 1933.

*From the Jefferson County Board of Health, Birmingham, Ala.

ries were obtained through personal interview with each attending physician.

To understand the methods used to tabulate mortality rates it is only necessary to remind you that all deaths are classified according to the International Classification of the causes of death, 200 in number, as compiled by the International Commission. Puerperal or maternal deaths are all those of which pregnancy, parturition, or lactation are the decisive causes. Maternal rates are based on deaths per 1,000 live births while other specific rates are usually based on deaths per 100,000 population.

The International List of Causes of Death provides only for classification by the single principal cause of death, and makes no provision for listing joint causes. Therefore, when two or more causes are given only one can be used for classification. Various methods are used in different countries for choosing which cause shall be taken. Since joint causes are a contributing factor in 40-60% of all maternal deaths these differences in practice make close comparison of domestic and foreign rates impossible. In this country the joint-cause manual of the Bureau of the Census is used. This manual lists all possible combinations of causes of death and indicates which cause is to be preferred. Classification is uniform under this system though occasionally when made by such arbitrary rules it may differ from the strict medical interpretation of the cause of death. These differences are particularly evident in certain diseases, such as, influenza in epidemic years, lobar pneumonia, chronic nephritis, and exophthalmic goiter.

Tables presented show the causes as interpreted from the death certificates (1) before investigation, (2) the causes after investigation where clinical information either confirmed or disproved the data presented on the death certificate and (3) the strict medical interpretation of the cause of death.

In order to show the relative standing of Birmingham and Alabama, tables are presented which give rates for various cities and states. These rates are taken from reports² of the Bureau of the Census of the Department of Commerce, and since they are compiled by a single organization the

greater uniformity in classification offers a fairer basis for comparison.

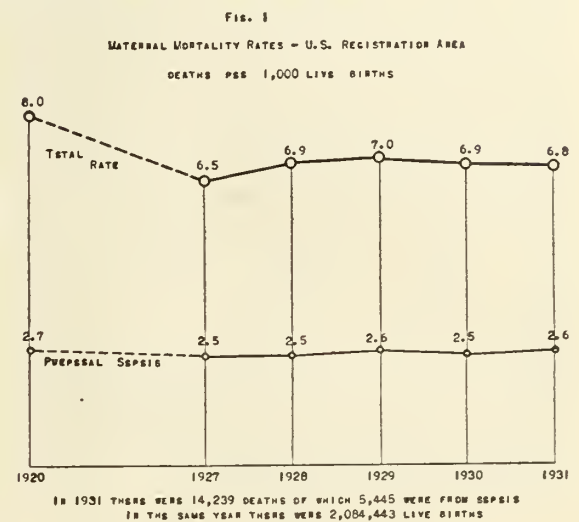


Fig. 1 shows the maternal mortality rates in the U. S. Registration Area which included only 10 states in 1915, but now includes 46 states and 96% of the entire population. The total rate of 8.0 means that eight women died of maternal cause for each 1,000 live births. The best we can say on the basis of these figures is that while there has been no actual retrograde movement in the risks attending childbirth, neither has there been any apparent progress.

Table 1
STATES
EFFECT OF COLORED POPULATIONS AND ILLITERACY
ON TOTAL MATERNAL RATES

	Mortality Rate***	Colored Population	Illiteracy (over 21 Yrs.)
South Carolina**	11.1	46%	19%
Florida	10.2	29%	8%
Louisiana	10.1	37%	17%
Georgia**	10.0	37%	12%
Alabama	9.1	36%	16%
Mississippi	9.0	50%	17%
Arkansas	9.0	26%	9%
Tennessee	8.2	18%	9%
Oklahoma**	7.7	11%	4%
North Carolina	7.6	28%	13%
Missouri	7.0	6%	3%
Virginia	6.9	27%	11%
Pennsylvania	6.3	4%	4%
Illinois	6.0	9%	3%
Maryland	5.9	17%	5%
New York	5.9	3%	5%
Kentucky	5.8	10%	8%
Wisconsin	5.4	4%	2%
Minnesota	4.8	4%	2%

***Average rate for 3 years (1927, '28, '29).

**Average rate for 2 years (1928, '29).

Table 1 shows the relation between maternal mortality rates, the extent of the colored population, and illiteracy. In making comparisons of maternal rates it is obviously unfair to the South to compare total rates without considering the extent of the

Negro population. Mortality rates among the colored are higher for all causes and their total rate averages about 75% higher than the white. Their excessive death rate³ seems most likely due to their greater lack of education, poorer medical and confinement care, the greater prevalence of venereal disease, and possibly the greater frequency of "contracted pelvis" due to rickets. There is a closer correlation of mortality rates with Negro population than with illiteracy. Alabama has the fifth highest rate among the states in the registration area, has the fifth highest Negro population, and is the fourth highest in illiteracy. Virginia and Maryland have comparatively low rates for their high percentage of Negro population.

Table 2
STATES (SOUTHERN)
COMPARISON OF MATERNAL RATES BY COLOR

	White	Colored
1 South Carolina*	8.9	Oklahoma* 17.6
2 Florida	8.7	Arkansas 15.4
3 Louisiana	8.0	Tennessee 14.6
4 Georgia*	8.0	Louisiana 14.0
5 Alabama	7.2	Florida 13.9
6 Oklahoma*	7.1	South Carolina* 13.4
7 Arkansas	7.0	Georgia* 13.2
8 Tennessee	7.0	Kentucky 12.5
9 Mississippi	6.9	Alabama 12.5
10 North Carolina	6.3	Mississippi 11.0
11 Kentucky	5.4	Virginia 10.8
12 Virginia	5.3	North Carolina 10.5
13 Maryland	5.3	Maryland 8.3

*Average rate for 1928 and 1929. All others average rate for 1927, 1928, 1929.

Table 2 shows rates by color. White and colored rates when taken separately should offer a fair means of comparison for the Southern States. White southern rates may, we think, be compared with total rates for the Northern States which have an insignificant Negro population. Alabama has the fifth highest white rate of all the states and the ninth highest colored rate of all the Southern States.

Table 3
CITIES*
EFFECT OF COLORED POPULATIONS ON TOTAL
MATERNAL MORTALITY RATES

	Mortality Rate	Colored Population
Memphis	14.9	38%
Birmingham	12.5	38%
Nashville	12.3	28%
New Orleans	11.6	28%
Norfolk	11.3	33%
Richmond	10.1	29%
Atlanta	10.0	33%
Indianapolis	9.4	12%
Washington	8.0	27%
Kansas City, Kan.	8.0	16%
Baltimore	6.6	18%
Louisville	6.4	15%
Hartford	5.2	4%

*Cities of 100,000 or more in 1920. Colored population by 1930 Census. Maternal rates are the average for 1927, 1928 and 1929.

Table 3 shows the total maternal mortality rates and the extent of the Negro population for certain cities. Birmingham has the second highest total rate of the 89 large cities of the United States and ranks with Memphis in having the largest Negro population. Hartford has the lowest rate with a Negro population of 4%.

Table 4
CITIES
COMPARISON OF MATERNAL RATES BY COLOR

	White	Colored
1 Memphis	13.0	Norfolk 19.5
2 Nashville	11.3	Memphis 18.1
3 Birmingham	11.3	Kansas City, Kan. 17.5
4 New Orleans	10.3	Richmond 15.6
5 Atlanta	10.0	Nashville 15.2
6 Indianapolis	8.7	New Orleans 14.2
7 Richmond	7.3	Birmingham 13.9
8 Kansas City, Kan.	6.7	Indianapolis 13.5
9 Washington	6.6	Washington 11.1
10 Norfolk	6.5	Louisville 10.3
11 Baltimore	6.0	Atlanta 10.0
12 Louisville	5.8	Baltimore 8.7
Hartford*	5.2	
New York City*	5.5	

*Total rate, negro population less than 5%.

Table 4 shows the maternal mortality rates for certain cities by color. The total rates for Hartford and New York City are included for comparison. Negroes constitute such a small per cent of their population that colored rates are not available. Birmingham has the third highest white rate and the seventh highest Negro rate of the 89 large cities in the United States.

FIG. 2
CLASSIFICATION OF MATERNAL DEATHS
JEFFERSON COUNTY
1931 - 1932

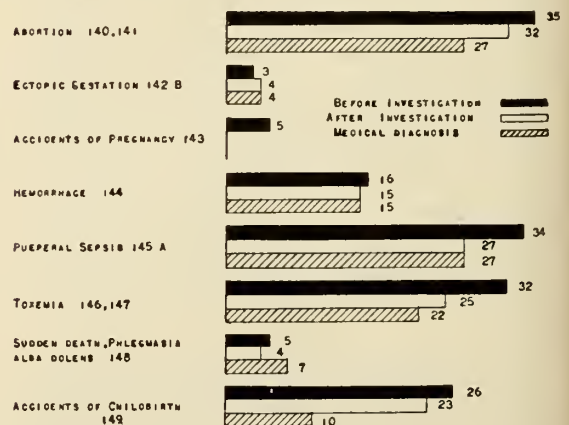




Fig. 2 shows the classification of all maternal deaths occurring in Jefferson County in the last two years, itemized according to the International List of Causes of Death.

The classification “before investigation” is the one made on the basis of death certificates and without further information. The classification “after investigation” is based on clinical histories of the individual cases and is more accurate than the first because many of the death certificates were incompletely or improperly filled out. The “medical diagnosis” classification is based on the strict medical interpretation of the cause of death without regard for any of the rules of the Census Bureau for classification of joint causes. This table is summarized later.

Table 5 CHANGES IN CLASSIFICATION FROM MATERNAL TO NON-MATERNAL CAUSES AS A RESULT OF INVESTIGATION										
Original Maternal Cause (As Given by Death Certificate)	Chronic Nephritis Chronic Myocarditis Decompensated Heart	Lobar Pneumonia	Influenzal Pneumon.	Syphilis	Valvular Heart Dis. Acute and Chronic	Criminal Abortion	Typhoid Fever	Others	Totals	
Abortions 140, 141		1		1		3		2	7	
Accidents of Pregnancy 143		1	1	1				1	4	
Puerperal Sepsis 145 A					1	1	1		3	
Eclampsia 146	4								4	
Accidents of Childbirth 149	1	1	1	1				1	5	
Others	2				1			2	5	
Total	7	3	2	3	2	4	1	6	28	

Table 5 shows 28 causes of death which were originally classified as maternal due to incomplete or improper entries on the death certificates. All were reclassified to non-maternal causes on the basis of additional information, and in accordance with the joint-cause rules of the Census Bureau.

There have been complaints in the literature from time to time that the official rates are unduly high and do not accurately reflect true conditions.

Table 6 NON-MATERNAL DEATHS CLASSIFIED AS "MATERNAL" ACCORDING TO CENSUS BUREAU RULES						
CLASSIFICATION 	Strict Medical:					Total
	Chronic Nephritis	Lobar Pneumonia	Influenzal Pneumonia	Others		
"Statistical"						
Abortions 141	2		1			3
Toxemias 146, 147	1		1	2		4
Accidents of Childbirth 149	2	7	2			*11
Total	5	7	4	2		18

*9 deliveries were normal and spontaneous, 2 were operative.

Table 6 shows 18 deaths which are classified officially as maternal though they would not be so considered from a strict medical interpretation of the cause of death. It represents the unavoidable error from following set rules, but is not of any marked importance in increasing the rates unduly except in epidemic years of influenza. The greatest error is in improperly filled out death certificates. Tables 7 A-B-C are a few illustrations.

Table 7A IMPROPER CERTIFICATION OF DEATHS FROM CRIMINAL ABORTION	
Cause of death was given on death certificates as follows:	
General Peritonitis following Septic Abortion (1)	Abortion (3) Peritonitis with Pelvic Abscess
Pyemia following Septic Abortion (2)	Puerperal Sepsis (4) General Peritonitis

Deaths from criminal abortions are classified under homicide and do not contribute to the maternal rates unless, as in these cases, the word “criminal” fails to appear on the death certificate. Distinction should always be made between criminal and self-induced abortion. The latter are classified as maternal.

Table 7B

IMPROPER CERTIFICATION ON DEATH CERTIFICATES

1

Original Certificate

The principal cause of death and related causes of importance in order of onset were as follows:

Toxic Goiter	Date of onset
--------------	---------------

Contributory causes of importance not related to principal cause:

Toxemia of Pregnancy

Corrected Certificate

The principal cause of death and related causes of importance in order of onset were as follows:

Toxic Goiter	Date of onset
--------------	---------------

Contributory causes of importance not related to principal cause:

2 Months Pregnant

2

The principal cause of death and related causes of importance in order of onset were as follows:

Lobar Pneumonia	Date of onset
-----------------	---------------

Contributory causes of importance not related to principal cause:

Pregnancy and Delivery

The principal cause of death and related causes of importance in order of onset were as follows:

Ruptured Uterus	Date of onset
-----------------	---------------

Operative Delivery.
(Version and Extraction)

Contributory causes of importance not related to principal cause:

Acute Hypostatic Pneumonia

The first certificate (Table 7 B) represents a misstatement of fact. The patient had a marked hyperthyroidism with a BMR of +83. She was two months pregnant but there was no good reason to add toxemia of pregnancy. It should have been filled out as indicated on the right.

The second certificate is deceptive, the true facts as disclosed by autopsy are shown on the right.

TABLE 7C
IMPROPER CERTIFICATION ON DEATH CERTIFICATES

1			
Original Certificate		Corrected Certificate	
The principal cause of death and related causes of importance in order of onset were as follows:		The principal cause of death and related causes of importance in order of onset were as follows:	
Septicemia six weeks after childbirth	Date of onset	Typhoid Fever	Date of onset
Contributory causes of importance not related to principal cause:		Contributory causes of importance not related to principal cause:	
		Normal Term Deliv. 6 wks. bef. Death	
2			
The principal cause of death and related causes of importance in order of onset were as follows:		The principal cause of death and related causes of importance in order of onset were as follows:	
Puerperal Sepsis	Date of onset	Sepsis following Abortion of 2 mos. pregnancy	Date of onset
Contributory causes of importance not related to principal cause:		Pneu. (Metastatic)	
Lobar Pneumonia		Contributory causes of importance not related to principal cause:	

The physician making out the first certificate (Table 7 C) made it contrary to his diagnosis. His diagnosis on the hospital chart reads "typhoid fever" and the clinical and epidemiologic facts bear this out.

The second certificate fails to distinguish between sepsis following abortion and sepsis following childbirth, a distinction which should always be made. If there is any doubt about whether death followed abortion, premature or full-term delivery, always record the month at which pregnancy terminated. If there is any doubt about the month, the attending physician is always in a better position to estimate it than a registrar in Birmingham, Montgomery or Washington.

FIG. 3
CLASSIFICATION OF MATERNAL DEATHS
JEFFERSON COUNTY, ALA. 1931-1932

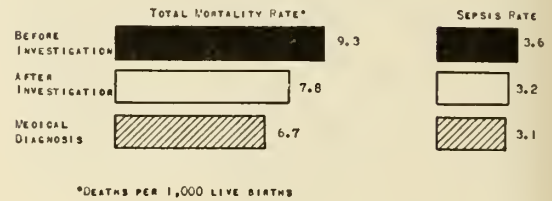


Fig. 3 summarizes the previous tables in showing the difference between the official rate as based on death certificates ("before investigation"), the official rates based on clinical information, and the rates based on strict medical interpretations. It shows that the easiest and quickest way in which our mortality rates can be immediately reduced is by more complete and accurate information on death certificates.

FIG. 4
MATERNAL MORTALITY RATES
(1) BEFORE INVESTIGATION (2) AFTER INVESTIGATION
BIRMINGHAM
JEFFERSON COUNTY
(INCLUDING BIRMINGHAM)

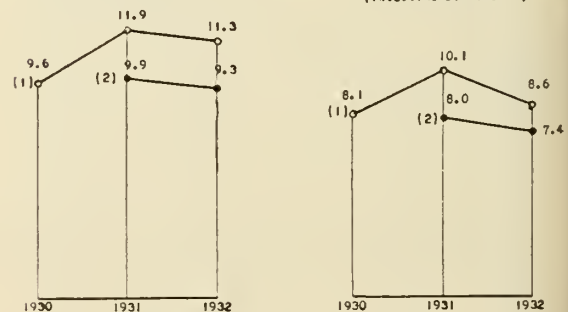


Fig. 4 again shows how improper or incomplete certification of death affects the official rates for the City and County.

Table 8
1931-1932
PRINCIPAL CAUSES OF DEATH—BEFORE AND AFTER VIABILITY

	Before	After	Total
Sepsis	26	28	54
Hemorrhage	4	16	20
Toxemia	4	21	25
Operations		12	12
Others		3	3
Pre-existing or Intercurrent Dis.	5	11	16
Total	39*	91	130
Mortality Rate	2.3	5.5	7.8

*32 deaths before viability are from abortions.

In studying the deaths which are more strictly associated with obstetric care and management some regrouping is necessary. Table 8 is a reclassification of Fig. 2 to show the more important causes of death

occurring before and after viability. Of the 39 deaths occurring before viability, or the 28th week, 32 were from abortions. In point of numbers abortions, which are not strictly a maternal problem, are the leading cause of death and account for 25% of the total rate. Furthermore, deaths from sepsis are about equally divided between abortions and deliveries. The leading strictly maternal causes in their order of importance become (1) puerperal sepsis, (2) toxemia, (3) hemorrhage, and (4) operations.* A discussion of these causes was a primary object of this paper.

Table 9 ABORTIONS—CAUSE OF DEATH							
Abortions	Sepsis	Hemorrhage	Toxemia	Chronic Nephritis	Influenzal Pneumonia	Exophthalmic Goiter	TOTAL
Spontaneous	19	1		1	1	1	23
Self Induced	7						7
Therapeutic			1	1			2
Criminal	4						4
Total	30	1	1	2	1	1	36

Table 9 summarizes abortions. Every fetus under 28 weeks gestation is considered non-viable and is classified as an abortion. Excluding the four criminal abortions in which death resulted from sepsis there are 32 deaths from abortion of which seven were induced, four were complications of concurrent disease which disease presumably caused their death. Thirty or 83% died with sepsis; and hemorrhage was a known contributory cause in 50% of these. Six septic abortions had dilatation and curettage operations. All induced abortions, excepting one, were performed by white women.

Abortions were the cause of one-fourth of all maternal deaths studied in Jefferson County. In Cleveland Bolt⁴ found abortions to make up one-third of the total puerperal deaths, while Levy⁵ found them to account for one-fifth of the total puerperal deaths in Newark. The local abortion death rate for Negroes was 50% higher than for whites.

*In table 8 the classifications "operations" and "pre-existing or intercurrent disease" include principally those listed under "accidents of childbirth, 149" as given in Fig. 2. A purely clinical classification of deaths attributed to operations is given in Table 16.

Puerperal Sepsis: Sepsis is the principal cause of maternal deaths and after eliminating those deaths due to sepsis following abortion (48%) it still remains the leading cause. Sepsis has been very largely eliminated from some of our best hospitals in this county, in this country, and abroad. It has been very largely eliminated from the home and hospital practice of some physicians in this county in both white and colored practice.

Time does not permit an extended discussion of the cause and prevention of puerperal sepsis. The cause is too well summarized by Polak who says "the eleven sources of infection are the ten fingers and the throat". Prevention has been accomplished too often to permit of argument.

Twenty-eight or 30% of the women in Jefferson County who died after the twenty-eighth week of pregnancy died of sepsis. Midwives attended four of these cases and physicians attended 24. Nineteen or 70% followed normal spontaneous deliveries. Of all deaths attributed to sepsis 81% died in local hospitals and the question naturally arises "where did this sepsis originate?"

Table 10 OCCURRENCE OF SEPSIS AS JUDGED BY ITS PLACE OF ORIGIN				Home	Hospital
Abortions				26	0
Spontaneous	Normal	Deliveries		16	3
Operative	Deliveries			5	4
Total				47	7
Puerperal Sepsis Rate*				2.0	1.1

*Exclusive of abortions.

Puerperal sepsis rates in hospitals are sufficiently high without crediting them with infections that occur in the home. In compiling Table 10 every possible precaution was taken to classify sepsis according to its place of origin, which is not necessarily according to place of delivery. When two or more vaginal examinations were made, or where there were actual attempts at delivery before admission to the hospital, the resulting sepsis was not considered the responsibility of the hospital. On this basis the sepsis death rate from deliveries (exclusive of abortions) was 2.0 for the home and 1.1 for the hospital.

Table 11
PUERPERAL SEPSIS RATES*
By Color and Place of Origin of Sepsis

	White		Colored	
	Home	Hospital	Home	Hospital
Births	5,580	4,516	4,194	1,891
Deaths	8	2	9	5
Sepsis Rate	1.4	.4	2.1	2.6

*Physicians cases only, midwives excluded. Abortions excluded.

Table 11 excludes abortions and midwife deliveries. No cases are included unless attended only by a physician. There is a considerable reduction of the white sepsis rate for hospital deliveries. On the other hand, the colored sepsis rate for hospitals is higher than for home deliveries. This may indicate that Negroes do not receive the same hospital care as whites, or that histories of infection before admission to the hospital on some could not be obtained. Four of the five cases of sepsis in Negroes developed in one hospital, and two of these were operative.

Table 12
1931-1932
Puerperal Sepsis Rates, and Stillbirth Rates for the Ten
Physicians with the Largest Private Obstetric Prac-
tice (100 or more Live Births in 2 Years).

	*Live Births	Sepsis Rate	Stillbirth Rate
Obstetricians:			
A	414	0	16
B	243	0	52
C	101	0	38
General Practitioners:			
D	532	5.6	71
E	136	0	28
F	108	0	0
G	105	9.5	18
Negro Practitioners:			
H	320	0	58
I	102	0	38
J	113	26.5	97

*Abortions excluded.

Table 12 is an attempt to show delivery sepsis rates, and stillbirth rates, for the ten physicians in this county who have the largest private obstetric practice. The rates are not to be considered as very accurate, of course, because of the small number of births upon which they are based. We are using them here only for the purpose of comparison. The list includes all men who in the last two years have attended more than 100 live births. Three obstetricians delivered 758 white patients with no deaths from sepsis. General practitioner "D" has the largest obstetric practice and attended

532 colored home deliveries with three cases of sepsis. Practitioner "F's" patients were practically all white and all were delivered at home without any deaths from sepsis. "G's" practice includes 105 white home deliveries with one death from sepsis. Two negro practitioners (H and I) together have 422 home deliveries with no deaths from sepsis. We think, this shows beyond reasonable doubt that Negroes can be delivered in the home without deaths from sepsis. The stillbirth rates* with a few exceptions reflect the color of the patients rather than the frequency of operative interference. The methods of Negro practitioner "J" afford the best example of the worst that may be expected in obstetrical judgment and technic. He has complete disregard for all principles of asepsis, and in such an environment makes numerous vaginal examinations during the course of labor. He gives pituitrin when the cervix is two fingers dilated and repeats its administration 4-5 times.

Toxemias: After viability the toxemias are second in importance only to sepsis and were the cause of death in 10 white and 15 Negro cases, and were almost equally divided among primiparas and multiparas. Convulsions first developed in 65% of all eclamptics after the eighth month. Convulsions first developed in two cases during delivery, and in four cases from 1 to 6 hours postpartum. Eclampsia and preeclampsia were contributory causes in nine cases dying from other causes.

Only 18% of all mortalities had what in the most liberal sense could be termed as adequate prenatal care; 37% had insufficient prenatal care; and 45% had no prenatal care. Five or 20% of the 25 toxemia deaths were seen frequently enough by physicians for adequate care to have been given. Of those receiving some care 40% were first seen in the first trimester, 35% in the second trimester, and 25% in the third trimester. Seventy-seven per cent were seen during the last trimester.

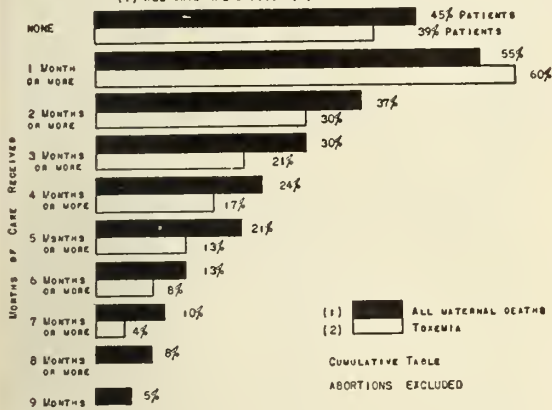
It is generally true that toxemia is most prevalent among those patients who receive inadequate prenatal care, and the data from our present study are no exception to the rule.

*Stillbirth rates as used in this paper are based on stillbirths per 1,000 live births.

FIG. 5

Prenatal Care

MONTHS OF PRENATAL CARE RECEIVED BY PATIENTS DYING FROM
(1) ALL MATERNAL CAUSES (2) TOXEMIA

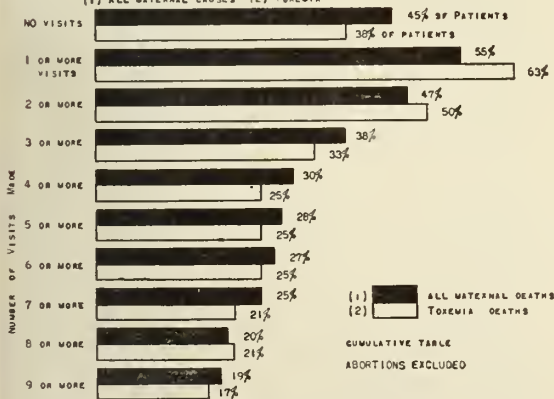


Figures 5 and 6 show that those cases who died of toxemia were those who had received less prenatal care than the average case. No argument can refute practical experiments which conclusively have shown, time and again, that proper prenatal care can prevent the development of eclampsia in the majority of instances.

FIG. 6

Prenatal Care

NUMBER OF VISITS FOR PRENATAL CARE MADE BY PATIENTS DYING FROM
(1) ALL MATERNAL CAUSES (2) TOXEMIA



Hemorrhage: Hemorrhage as a cause of death after viability ranks third with 20 deaths distributed as shown in Table 13. Excluding one abortion and one patient with an ectopic gestation who refused oper-

Table 13

Hemorrhage was the primary cause of death as follows:

	Operative	Total
Abortion	1	1
Ectopic Gestation	3	4
Placenta Previa	6	6
Ablatio Placenta	1	1
Postpartum	4	8
Total	14	20

ation all cases were operative except four. Postpartum hemorrhage followed three versions and extractions, one forceps delivery, and four spontaneous deliveries. Of the hemorrhages following spontaneous delivery one had pituitrin in the second stage, while the attendants for two cases left their patients within an hour after delivery and were called back in several hours and after the patients had bled out. Hemorrhage was a contributory cause of death in 13 cases of sepsis, 12 of which were abortions. While no data are available it is evident that pituitrin is much more generally used in the second stage by general practitioners than by obstetricians.

Table 14
TOTAL OPERATIONS CONCERNED WITH MATERNAL DEATHS

Before Viability	11
D & C following Abortions	6
Therapeutic Abortions	3
Laparotomy, Ectopic Gestations	2
After Viability	38
Cesarean Sections	12
Version and Extractions	21
Forceps	3
Manual Extraction of Placenta	1
Laparotomy, 8 Mo. Ectopic Gest.	1
Total	49

Operations: Table 14 shows the total operations concerned with maternal deaths. Two postmortem cesareans following death from eclampsia are not included. Live babies were delivered in both cases. Three deliveries by version and extraction had attempted deliveries by forceps without success. Two versions and one manual extraction of a placenta were performed without gloves; sepsis caused the death of all three. Two therapeutic abortions were done for chronic nephritis (1 bougie, 1 bag) and one (D & C) for early toxemia of pregnancy. The indications for operations, after viability, are shown in Table 15.

Table 15

INDICATIONS FOR OBSTETRICAL OPERATIONS

Indication	Operations			Total
	Cesarean Section	Version Extraction	Others	
Placenta Previa	3	5		8
Malposition	1	7		8
Inertia	2	5	1	8
Eclampsia	2			2
Disproportion	2		1	3
Ablatio Placenta		1		1
Cardio-Renal Disease	2			2
Lobar Pneumonia			1	1
Others		3	2	5
Total	12	21	5	38

Table 15 shows the indications for obstetrical operations performed on patients who died.

According to Peckham⁶ the maternal mortality is lowest following spontaneous delivery at term, increases in the operative type, and is highest when pregnancy terminates prematurely. Plass⁷ in the American Journal of Obstetrics and Gynecology for August 1931 gives probably the most comprehensive data that can be found on the relation of forceps and cesarean section to maternal and infant mortality and morbidity. He states that "the most striking change in obstetrical practice in the past decade and a half has been the marked relaxation in indications for intervention during labor and the great increase in operative deliveries". He reports an incidence for cesarean sections of 2.9% for 94,235 deliveries in 119 hospitals and places the average death rate between 5 and 10%, saying that it is probably nearer the latter figure. He reports an incidence for forceps operations of 17.9% for 145,812 deliveries in 233 institutions. The death rate for forceps deliveries based on 11,189 deliveries from 116 of these hospitals was .32%.

Bolt⁴ in a maternal study in Cleveland for 1931 found that for all maternal deaths occurring after viability 66% had some type of operation. This compares with 50% found by Rothert⁸ in Kentucky, 60% by Calvert⁹ in Wisconsin, and 72% for primiparas and 53% for multiparas found by Dekruif¹⁰ in Massachusetts. The present study reveals an operative incidence of 40% for all maternal deaths occurring after the twenty-eighth week.

Table 16
DEATHS ATTRIBUTED TO OPERATIONS

Cesarean Sections	3
Sepsis	2
Intestinal Obstruction	1
Version and Extraction	10
Sepsis	3
Ruptured Uteri	3
Hemorrhage, Postpartum	4
Forceps	2
Sepsis	1
Shock	1
Manual Extraction of Placenta	1
Sepsis	1
Total	16

Table 16 shows some deaths which, we think, can be directly attributed to the operations performed.* It includes deaths

*Classification is entirely clinical and is not comparable to that given in Table 8.

presumably due to (1) infection during operation and (2) hemorrhage, shock, and trauma resulting from operative procedures. All cases with placenta previa and ablatio placenta are excluded on the assumption that death resulted from hemorrhage and not primarily from the operations performed.

Table 17
INCIDENCE OF OBSTETRICAL OPERATIONS AMONG
BIRMINGHAM AND FAIRFIELD HOSPITALS
Based on Total Births During 1931 and 1932

Hospital	Cesarean Section	Version Extraction	Forceps
A	1.6%	4.0%	
B	4.2%	28.0%	28.7%
C	2.1%	3.3%	
D	3.9%	13.8%	28.0%
E	3.3%	13.0%	
F	6.6%	3.9%	
Average*	2.3%	9.2%	

*Based on 6,296 deliveries with 144 Cesareans and 577 Versions.

Table 17 shows the incidence of some operations for the six hospitals in Birmingham and Fairfield, in which 93% of all hospital cases were delivered. The average incidence of cesarean sections for the 6,296 hospital deliveries was 2.3% which may be compared to the average incidence of 2.9% found by Plass.⁷ The mortality rate for the 144 cesarean sections performed in these hospitals is 8.3%. Plass found the average cesarean mortality between 5 and 10%. The forceps incidence given for the two hospitals is high; the incidence of versions and extractions also seems high.

Thirty-eight per cent of all deliveries during this two-year period were made in hospitals; this includes 45% of all white and 29% of all colored deliveries. Sixty per cent of all cases which died were delivered less than 24 hours after admission.

Puerperal death rates for hospitals have been quoted in scientific journals and in popular magazines from time to time, and frequent unfavorable comment is made because of the apparent lower death rate in home deliveries. Such data, of course, are based either on the place of death, or on the place of delivery as revealed by the death and birth certificates. The use of such grossly inadequate information is little short of ridiculous and is just as logical an assumption as saying that, because most people die in bed, a bed is the most dangerous place for a person to stay.

To the contrary, many people would live longer if they went to bed earlier in the course of their illness; likewise, many ex-

pectant mothers would live longer if they, their relatives, and many physicians used the hospital as other than a means of last resort. Too frequently infection has already occurred, or one or more operative deliveries have been attempted before admission to the hospital.

Unquestionably the facilities, technic, obstetric skill and judgment which hospitals offer reduce mortality rates. On the other hand the good results which might be obtained are to some extent obscured by the tendency to hospitalize only the more severe cases; hospitalization after complications have proceeded to the point where no treatment can be of much value; the increasing tendency to operative interference of normal labor; and the practice of some institutions to house medical, surgical, and obstetric patients in the same units under the care of the same personnel.

Midwifery: Alabama State laws define a "midwife" as any person, other than a regularly licensed physician, who shall attend any woman at or during childbirth. Permits are issued by the County Board of Health which also exercises some supervision. Licensed midwives are required to meet with the nursing staff monthly for group teaching in nursing care of mother and infant. A public health nurse visits 75% of all cases within 72 hours after delivery by midwives.

In 1931 twelve per cent of all white and 72 per cent of all colored births in Alabama were attended by midwives. During 1931 and 1932 one per cent of the white and eight per cent of the colored births in Birmingham and Jefferson County were attended by midwives. The bulk of practice is done in the vicinity of Bessemer and in the area between Birmingham and Bessemer. No midwives have been licensed to practice within the city limits of Birmingham since 1921. However, permits for those who were practicing in the county in 1920 have been renewed from year to year. It has been the policy of the County Board of Health to discourage this practice, and not to license new applicants. Some physicians unfortunately encourage midwifery practice by signing birth certificates for unlicensed midwives, and by permitting them to deliver colored patients when the physician does not find it convenient to attend.

During this period of study 33 licensed midwives attended 486 births, and approximately 59 unlicensed midwives, neighbors, and "grannies" attended 200 or 30% of such deliveries. There were six mortalities, two from operative interference and shock, and four from sepsis. Eighty-six per cent of all midwife deliveries were colored.

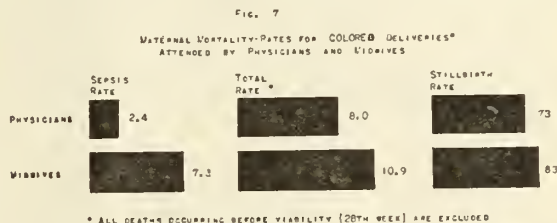


Figure 7 compares rates for colored deliveries attended by physicians with rates for colored deliveries attended by midwives. All deaths occurring before viability (28 weeks) are excluded in order that the rates shall express, as near as possible, the risks attendant at childbirth, and exclude other factors such as abortion, ectopic gestation, and early toxemia. Were all causes of death included, for the full period of pregnancy, the mortality rate for cases attended by physicians would be the same as for those attended by midwives.

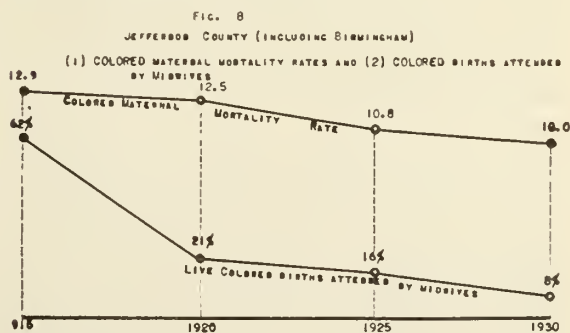


Figure 8 shows the rapid decline in midwifery practice among the colored population of Jefferson County in the last 15 years. Contrary to what one might expect there has been no corresponding decline in the colored mortality rate.

Midwifery as practiced here is largely a necessary evil permitted to exist because it allows remote communities, and the poor, to obtain some obstetric care when licensed physicians are not available because of time or distance. About all that can be taught these midwives is how to maintain cleanli-

ness, and that they should not interfere with labor. They are not to be compared with the midwives of European countries who usually have better obstetric training and experience than most of our graduate nurses. The solution lies not in the revocation of licenses but in extending the services of medical men to all communities and classes, thereby eliminating the demand for midwives. It is the unlicensed midwife, "granny", or neighbor who locally is largely responsible for the mortalities in midwifery practice.

Table 18
RATE SUMMARY BY COLOR—1931 AND 1932

	White	Colored	Total
Live Births	10,096	6,650	16,746
Stillbirths	324	492	816
Maternal Deaths	52	78	130
Maternal Mortality Rate*	5.2	11.7	7.8
Stillbirth Rate*	32	74	49

*Deaths per 1,000 live births.

Rates by Color: Table 18 shows the rate summary by color. When the total rate of 7.8 is calculated for white and colored separately we find a favorable figure of 5.2 for whites; while the Negro rate stands at 11.7, more than twice as high. Were we to itemize the Negro rate we would find the rates for each particular cause 2 to 3 times higher than for whites. Negroes constitute 40% of our population, furnish 40% of our births and 60% of our maternal deaths.

Age Averages: The average age for all mortalities was 27 years and there is no significant difference in the ages of white and colored except among primiparas. White primiparas averaged 25 years of age and colored primiparas 22 years. The average age of all primiparas was 23 years, and all multiparas 30 years.

Responsibility: Tables 19A, 19B, and 19C are an attempt to show the responsibility for these maternal deaths. It is too much to hope that these tables are mathematically correct, and you may not agree on the basis on which responsibility is divided. They are used here only to indicate where-in solution of the problem lies.

It is primarily the responsibility of the patient to seek medical advice concerning her ability to go through pregnancy; and, when pregnant, to obtain adequate prenatal and confinement care. Ignorance and indifference are largely responsible for their failure to do so.

Tables 19A and B

DIVISION OF RESPONSIBILITY

Responsibility for maternal deaths may reasonably be divided as follows:

Patients:	
Ignorance of pre-existing disease for which pregnancy was contraindicated	12%
Self induced abortions	5%
Failure to call medical aid until moribund from spontaneous abortion complicated by sepsis or hemorrhage	11%
Failure to obtain any prenatal care	9%
Failure to obtain sufficient prenatal care	6%
Midwives:	
Deliveries resulting in death from shock or sepsis	5%
Physicians:	
Sepsis following spontaneous or operative deliveries	15%
Hemorrhage, shock and accidents in operative deliveries	12%
Eclampsia in patients regularly attended by physicians	4%
Respiratory Complications:	
Influenza or pneumonia producing or complicating abortion or delivery	10%
Undetermined:	
Responsibility divided, or undetermined	11%
Total	100%

Physicians, in these tables, are held liable for sepsis cases for which they were the sole attendants. A few cases may possibly be included in which the patient herself was responsible for the infection. Deaths from hemorrhage, shock, and accidents have been carefully selected from fairly complete case histories. Possibly all of the eclamptic deaths could not have been prevented. However, these cases are included because they were seen early in pregnancy before any signs or symptoms were present, and toxemia developed during the time the patients were regularly attended by their physicians.

Respiratory complications (influenza and pneumonia) are grouped separately because we do not believe any responsibility can be placed for these deaths.

Table 19C

JEFFERSON COUNTY 1931-1932 DIVISION OF RESPONSIBILITY, SUMMARY

Responsibility of:	Per Cent of Deaths	Mortality Rate
Patients	43%	3.4
Midwives	5%	.4
Physicians	31%	2.4
Influenza, Pneumonia	10%	.8
Undetermined	11%	.8
Total	100%	7.8

Table 19c is a summary to show how much each group contributes to the total mortality rate, and indicates that ignorance and neglect on the part of the patient is the greatest single factor. The physicians' contributions represent for the most part lack of regard for the principles of asepsis,

poor operative technic, bad obstetric judgment, and careless supervision during the prenatal period.

CONCLUSIONS

It is not to be hoped that any measures will, or can, be instituted that will effect an early and appreciable reduction of our maternal rates. The nature of the problem itself, involving, as it does, educational, social, economic, and racial problems, as well as medical, is such that concerted effort along many different lines must be extended over a period of years before any material reduction can be realized.

However, much can be done individually and collectively by members of the profession which would be of material benefit. We refer particularly to:

1. Greater care on the part of some to exercise more rigid prenatal care, to use greater care in maintaining asepsis, and to practice a more conservative management of obstetric cases. Freer and earlier consultation should be sought particularly among those who are less experienced in obstetric operations.

2. Hospitalize pathologic cases earlier and avoid operative deliveries in the homes whenever possible.

3. Use every opportunity in general practice to advise women against pregnancy when the presence of chronic disease makes childbearing inadvisable; and, go even further by instructing such patients in proper measures for birth control.

4. Use every opportunity to educate the public to the need for prenatal care throughout pregnancy.

5. Arrange clinics for practical instruction of Negro physicians who are badly in need of some guidance to keep them from slumping into the environment in which they work; and finally,

6. More complete and more accurate certification of the cause of death will not reduce mortalities but will at least furnish rates which more nearly reflect the conditions as they actually exist.

REFERENCES

1. Pub. Health Rep., U. S. P. H. S., Nov. 21, 1930, p. 2887.
2. Mortality Statistics, Bureau of the Census 1928, 1929.

3. Maternal Mortality, U. S. Department of Labor, Children's Bureau Publication No. 158, p. 36 and 38.

4. Bolt, Richard A.: Maternal Mortality Study of Cleveland, Ohio. Am. J. Pub. Health, Feb. 1933, p. 109.

5. Levy, Julius: Status of Maternal and Infant Mortality—Report of Committee, Trans. Am. Child Health Ass'n. 1929.

6. Peckham, C. H.: Influence of Age and Color on Maternal and Foetal Death Rate, Am. J. Obst. & Gynec., June 1932, p. 787.

7. Plass, E. D.: The Relation of Forceps and Cesarean Section to Maternal and Infant Morbidity and Mortality, Am. J. Obst. & Gynec., 22: 176 (August) 1931.

8. Rothert, Frances: Maternal Mortality in Kentucky in 1927, Kentucky M. J., June 1930.

9. Calvert, Charlotte J.: Wisconsin Maternal Mortality, Wisconsin M. J. 29: 2 (Feb.) 1930.

10. Dekruif, Mary F.: A Study of 370 Deaths of Primiparae, N. Eng. M. J., Dec. 27, '28, p. 1302.

TREATMENT OF RECENT FRACTURES*

By

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Treatment of fractures is one of the oldest known branches of surgery. Despite this, the progress which had been made in their treatment up to the time of the World War, except for short periods in the eighteenth and nineteenth centuries, had probably been less than in any other branch of surgery.

The necessity for improved treatment has been demanded in the last few years by the increasing number of fractures and their disabilities, resulting from industry, automobiles, aeroplanes, and other technologic developments. With this situation increasing daily, it is paramount that the medical profession become better prepared to treat fractures.

Even though many safety first methods and precautions have been introduced to lower the incidence of accidents, we can never entirely eliminate them due, mainly, to the element of human carelessness. The aim of treatment is to expedite a complete recovery of function which is best attained

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*From the Orthopaedic Clinic, Employees' Hospital.

when the procedures run in harmony with natural processes; that is, with powers of resistance, growth and repair.

The proper procedures in the early history of a fracture as regards treatment and the immediate recognition of all local or general pathology are important. Bone pathology is frequently seen complicating the site of a fracture or contiguous bone which may be a local manifestation of some constitutional disease which disease was the predisposing cause of the fracture.

Immediate splinting of the part involved regardless of the certainty of a fracture should be carried out. "Splint them where injured" and thereby prevent unnecessary local trauma and shock. The benefit of splinting the fracture at the place of accident before transportation is attempted was demonstrated forcibly during the World War when the mortality rate was reduced in compound fractures of the femur from nearly 80 per cent to 16 per cent after the development of this procedure.

The splinting should be that which is simplest, most effective and most easily applied. Usually the simpler the splint the easier the application. In every case the joints which are proximal and distal to the suspected fracture should be splinted. This procedure should be carried out throughout the whole treatment whether in the emergency or the permanent stage, but is too often neglected.

Recognition and treatment of shock and any injury to the nerves, blood vessels and muscles are imperative. The patient who has a major fracture should be taken to a hospital, when possible, where he can be best treated. On account of the increasing demands on the hospitals it is becoming necessary that one or more physicians of the staff be made responsible for all fractures admitted. These particular physicians should be especially interested and prepared in the modern treatment of fractures.

Roentgenograms, anteroposterior and lateral views, should be made before any attempt at reduction. Following the reduction these same views, as well as other roentgenograms at different intervals during convalescence, should be made. These latter procedures are not only necessary as regards checking up the position and union

of the fractures, but as a protection and record for the doctor treating the case. When fluoroscopic examinations and reductions are done, roentgenogram checks should also be made. Fluoroscopic examinations cannot be recorded as roentgenograms, therefore, they do no good before injuries. Fractures cannot be treated by roentgenograms alone; their proper reapposition constitutes only one of the important processes in their treatment.

The type of treatment depends on the individual case. Each fracture, with its complications, is a law unto itself demanding individual commonsense surgical judgment. The treatment should be adaptable to the fracture, not the fracture to the treatment.

Early reduction should be done, provided local and general symptoms permit. Relaxation during the reduction of a fracture is demanded. This relaxation can be accomplished by continued traction, or spinal, local or general anesthesia. When doing the closed reduction method, care must be taken that no serious local trauma is caused. Repeated attempts at closed reductions are not necessary before making a decision as to whether the continuous traction or open reduction technique is to be carried out in an individual case.

Recent contributions appearing in the medical literature are bringing about an unwarranted reaction in many instances regarding the use of skeletal traction. Too frequently are the limitations and the indications for treatment by the traction method, especially with the Steinman pin and Kirschner wire, being abused. Skeletal traction which has usually been classified in the past as conservative appears to the writer to be rapidly becoming a radical treatment. The medical profession should not become over-enthusiastic regarding the skeletal traction methods and assume that a panacea has been found for the treatment of all fractures. The writer still advocates and practices the use of the Steinman pin and Kirschner wire in selected cases, which in his opinion are ideal. Rarely, if ever, are these selected cases in children.

Operative procedures, when necessary, should be carried out without hesitation. The type of fixation to be used in open reduction is to be governed by the surgeon

treating the case as regards his experience and results with certain types of bone fixation, provided that certain technique is a standard method.

The majority of all fractures can be reduced by the closed manipulative method and immobilized by circular plaster casts. These simple procedures, however, are too often neglected. Too tight bandages, splints or casts must never be applied. Frequent observation during the first few hours following the fracture and every few days thereafter should be made. In any fracture living tissue is involved whether it be bones, muscles, ligaments, joints, nerves or blood vessels, any or all of which demand frequent attention. Without this observation undesirable results will usually occur. Fractures, however, must not be tampered with too often; palpate only when necessary, but observe frequently.

Rest and immobilization are facts which have been known in the treatment of fractures since the days of Hunter; however, too prolonged fixation is a very disabling procedure. Too early weight bearing must be prevented. Serious complications frequently result if this is not carried out. Early active motion used by the patient is one of the most important procedures in accomplishing good functional results. Hot and cold contrast baths are to be used when sufficient callous formation has taken place to allow the temporary removal of any fixation from the involved part. Other forms of physiotherapy when accessible are of great help. All of these procedures should be under the direct supervision of the doctor treating the case and, when possible, in cooperation with a capable physiotherapist of the medical profession.

Ultimate results to be attained and hoped for in any fracture are union, alignment and function. When all other factors are equal, perfect bone approximation is usually conducive to early union and restoration of function. However, when good alignment is present with a possibility of obtaining good functional results it should not be sacrificed to merely obtain perfect bone approximation. Finally, function is not only dependent upon union and alignment but also upon the full cooperation and determination of the patient to aid himself during convalescence.

CHRONIC ACIDEMIA*

ITS RELATION TO CHRONIC DISEASES

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One of the fundamental teachings of physiology is that the complex activities of the body which we call life can take place only in an alkaline medium. The moment the delicate equilibrium expressed by the chemical reaction of the blood and tissues is upset, health is destroyed. Indeed it is no exaggeration to state that life and happiness hang in the balance of the chemical reaction of the blood. A normal state of health demands the constant maintenance of the correct degree of alkalinity. Under all circumstances, the blood strives to keep a uniform chemical reaction, the pH being close to 7.5. Life is incompatible with any marked change in its hydrogen ion concentration.

In order to preserve the alkaline reaction of the blood, the body is equipped with reserve alkaline substances known as buffers. These buffers are composed mainly of the monobasic and dibasic carbonates and phosphates of the fixed bases, the principal salt being sodium. The proteins of the blood, too, are responsible for much of its buffer action. When acids are formed in the body, whether from incomplete combustion of fats or the excessive consumption of carbohydrates, the buffer substances stand ready to protect the body against the acid onslaught, provided—and this is the important point—that the diet causing the formation of these acids is corrected before the buffers have become exhausted.

Acidemia may be defined as an attack upon the alkalinity of the blood and tissues; i. e., an attempt of acids formed in the body either to deplete the alkaline reserve forces or to actually change the reaction of the blood. It may conveniently be divided into three stages: (1) the stage of buffer depletion, (2) the stage of acidemic symptoms, and (3) the stage of actual change in the reaction of the blood.

CAUSES OF ACIDEMIA

In studying the problems of acidosis, we have in the past concentrated our attention too much on fat metabolism. It is true that diabetic acidosis arises from an insufficient

*Read to the Association in annual session, Montgomery, April 18, 1933.

combustion of the fatty acids, resulting in an inundation of the system with b-oxybutyric acid. However, the most common cause of acidemia, as we have defined it, will be found in an excessive consumption of carbohydrates. The carbohydrates from which harmful acids are derived are not those of fresh fruits and vegetables but those contained in starches and sweets. It is essential to keep the difference between the various carbohydrates constantly in mind. For example, the levulose contained in honey has an entirely different physiologic action from that of the dextrose in fruits. The same individuality applies to the various proteins. We all know that a laborer can not work long on the proteins from nuts; he requires the proteins from meats to maintain his vigor.

We can see the causes of acidemia at once, as soon as we study the dietetic habits of this class of patients. There is a marked change in the ratio of proteins to carbohydrates contained in the diet. Instead of 1:4 as is normally the case, the ratio may be as high as 1:15. It is this increased percentage of carbohydrates in the diet that results in the formation of an abnormal quantity of acid by-products, which threaten the alkalinity of the blood.

Acidemia is the condition that arises when the point of complete utilization of ingested carbohydrates has been exceeded, but saturation of the body by the acid products has not yet been attained. When acidemia is long continued and saturation results, the condition is known as acidosis. Acidemia is the underlying cause from which many of our ills spring. In this category we may safely include various toxic states, e. g., diarrhea, dysentery, colonic stasis, pellagra, rheumatism, indigestion, appendicitis, cholecystitis, nephritis, vascular hypertension, myocarditis, hysteria, hypochondria, neurasthenia, melancholia, toxic mania, etc.

All the complex physiologic processes taking place within the body are so delicately conditioned by the chemical reaction of the blood and tissues that it is easy to understand why so many diverse diseases may follow in the wake of acid invasion of the blood. In 1912 the author¹ pointed out at a meeting of the Houston County Medical Society that the symptom-complex we call

pellagra is really an acidemia, resulting from a carbohydrate or alcoholic diet in which there is but little protein, and that this condition is a poisoning rather than a disease entity. Since that time much evidence has been adduced to confirm his contention.

In 1928² the writer published a paper in which it was shown that chronic arthritis of the most severe type, and long standing, readily responded to alkaline therapy and a diet in which the concentrated carbohydrates were eliminated; and that recrudescences did not occur, provided the patient did not revert to the old diet. Hypertension is another syndrome following in the wake of carbohydrate acidemia.

In 1921³ the essayist gave his reasons for attributing this condition to acid intoxication, following the excessive consumption of carbohydrates. He showed that in all his cases there was a large preponderance of carbohydrates in the diet; and they all showed acidemia; that in former years a large percentage of our patients with nephritis were addicted to alcohol (a pure carbohydrate product); that, in every instance, the blood pressure quickly fell to normal on a protein diet and such drugs as would promote alkaline secretion; that a carbohydrate or alcoholic diet promoting acid by-products resulted in a prompt elevation of the blood pressure. If space permitted, we could submit a similar chain of evidence to substantiate the relation between various common syndromes and acidemia.

In 1922 the writer⁴ published a paper in which the relation of carbohydrate intolerance to hypertension, nephritis, cardio-vascular-renal disease, myocarditis, rheumatism, pellagra, etc., was fully explained.

SYMPTOMS OF ACIDEMIA

Few other disturbances of the body evidence themselves in such varied forms as acidemia. As has already been pointed out, the depletion of the alkaline buffers and the interference with the normal alkalinity of the blood may lead to a whole chain of abnormal conditions. In the same fashion, the clinical manifestations of acidemia may appear in widely different forms.

Elsewhere the essayist⁵ has alluded to the clinical evidences of chronic acidemia. The gastro-intestinal symptoms are the most constant. Significant of acidemia are

a scarlet tongue and throat, an increased secretion of saliva and gastric distress after eating. Usually there is considerable gas. There may be constipation or diarrhea. In the latter case, mucus stools are common. Sometimes the feces are putty-colored, light grey, or even white. While putrefaction of the proteins in the intestinal canal is quite common, it is to be noted that the patient always gives a history of eating an insufficient supply of protein. These patients are never heavy meat eaters. The nervous symptoms are likewise subject to great variation. In mild cases they may be typical of hysteria. When acid intoxication is more advanced, toxic mania or other psychoses of toxic origin may result.

In some borderline cases the similarity to dementia praecox is so close that there is great difficulty in the differential diagnosis. It is a significant fact that in dementia praecox, as in other psychoses, a proper diet to correct acidemia of carbohydrate origin has frequently been observed to promote marked improvement in the mental symptoms.

The important respiratory sign of acidemia, when the condition has been neglected and allowed to advance, is hyperpnea, or labored breathing. We should never wait for the appearance of hyperpnea. To do so is a confession of diagnostic shallowness since by this time the disturbance has been allowed to progress until the body fluids are flooded with acid radicals. It might be well to study for a moment the etiology of this peculiar or labored breathing. This symptom is easily understood when we understand the physiologic action of the lung. It is the function of this organ to absorb oxygen from the inspired air, and distribute it to the general circulation, mainly through the pulmonary vein. A little chemistry and the problem is solved. Alkalies attract oxygen; acids repel it.

When the alkaline content of the blood has been reduced to such an extent that it can not absorb a sufficient amount of oxygen, air hunger is the result. In many instances the final symptom is coma. Unfortunately, many patients are still brought into our hospitals comatose, although they exhibited for months beforehand symptoms that should have been recognized as significant of acidemia and impending hyperpnea

and coma. Furthermore, the application of laboratory tests for acidemia would have indicated the nature of the case long before the appearance of these serious symptoms.

LABORATORY TESTS THAT AID IN DIAGNOSIS

Oftentimes the presence of the gastro-intestinal and nervous symptoms strongly suggests acidemia, but one is nevertheless in doubt as to the existence of this condition. In such cases one should never wait for the development of hyperpnea but should resort to laboratory tests at once. The most accurate means of measuring the loss of the buffer power of the blood and tissues and the degree of acidemia is by determining the carbon dioxide combining power of the blood plasma. Carbon dioxide is carried to the lungs chiefly in combination with the fixed bases of the blood. The latter constitute the great bulk of the alkaline reserve forming a bulwark against the action of the acids formed in the body. Consequently, when the alkaline bases are diminished because of acidemia, the carbon dioxide power of the plasma is proportionately reduced. The most satisfactory method of determining the carbon dioxide combining power of the plasma is by the method of Van Slyke and Cullen^{6, 7}. Feinblatt and Eggerth⁸ give from 65 to 75 volumes per cent as normal readings. A combining power of less than 65 volumes per cent indicates acidemia. When it is below 20 per cent, there is a severe acidosis.

Instead of making the examination on the blood plasma, one may determine the CO₂ tension of the alveolar air. For this purpose, the Fridericia apparatus⁹ is most frequently used. The normal reading with this test ranges from 40 to 45 mm. of mercury. A tension between 30 and 35 mm. indicates mild acidemia; below 25 mm. advanced acidosis. It is only in the final stages of acidosis, that is shortly before death, that the reaction of the blood is actually changed.

Heretofore, we have been studying the progress of acidemia in terms of loss of the alkaline reserve of the body; that is, general acidosis has been threatened rather than actually existing. When the alkaline reserve of the body is completely exhausted, the acids draw upon the alkalies of the blood and begin to affect the reaction of this medium. At this (*Continued on page 152*)

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ALABAMA'S MIDWIFERY PROBLEM

By and large, Alabama's population is predominantly agricultural and rural. According to the 1930 census, of its 2,646,248 souls, 744,273 are quartered in urban centres, and 1,901,975 are scattered over the countryside. That is to say 72 per cent is rural and 28 per cent urban. Furthermore, 1,700,775 of this population is white and 945,473 is coloured, the percentage being 64.3 whites and 35.7 coloured. The average number of children born in Alabama is 63,337 annually, giving for 1932 a birth rate of 23.5. Of this number 62.7% are white and 37.3% coloured. Of the children born in Alabama, statistics show that in 33 per cent, the mothers received no trained medical care, having been delivered only by a midwife.

Does this not constitute a real problem? A problem which, when one considers the intellectual calibre and training of the average midwife, should demand serious consideration at the hands of the medical profession and of health workers. In 1931 there were 3,568 midwives in Alabama under the supervision of county health departments in 54 of the 67 counties. During 1932 this number was reduced, by nearly 1,000, to 2,684. This reduction was accomplished by withholding permits from those whose records showed a preponderance of untoward results such as stillbirths, neonatal

and maternal deaths. Yet, in spite of this reduction, the activities of these unskilled attendants increased from 15,325 to 17,913; approximately 2,500.

With the present economic status of the average family at a dangerously low ebb and with a large negro population, coupled with the fact that in many of the counties in the northern part of the State medical aid, because of the lack of travel facilities, is difficult to obtain, whether we will it or not, the midwife can only be viewed as a necessary evil in the South for many years to come. Ignorance is no cure for anything. If midwives there must be, then earnest and combined effort should be put forth both by the medical profession and its official agency—the Health Department—to see that all proper means are exhausted to elevate the present standards and practices of this, by no means negligible, group.

In truth, in this matter of improved midwifery service, we, in this country, lag far behind others. England, for example, so far back as the middle of the last century, began to seriously agitate in favour of better training for women who attended confinements for gain, as well as for some sort of restrictions to be thrown about the untrained woman. The result is that, since 1902, and because of this prolonged, persistent agitation, all midwives are required to be trained in England and the British Medical Association has recommended the adoption of a National Scheme which is based on the assumption that a midwife suffices for normal accouchments, subject to the condition that antenatal, and when necessary, intranatal and postnatal, medical care is available. This represents the slow, gradual evolution of a problem which has peculiar and special implications for the people and the profession of the entire South. It may well be that, because of the economic and social variants which obtain in different parts of the United States, the trends of approach looking to an ultimate solution will differ considerably and the final answer be far from a nation-wide uniformity of practice. Each state, or each group of states having similar economic and social conditions, should go seriously to work in the effort to at least improve present conditions, looking to a final satisfactory solution.

For some years the local health departments in this State, working in close harmony with the medical profession and the county boards of health, have attempted to weed out the more grossly unfit among the midwives through a system of a limited amount of coaching and the issuance of permits. This has been a beginning and has done some good, but is clearly not sufficiently far-reaching. Physicians practising obstetrics can make a very definite contribution to the furtherance of any contemplated program by lending their unstinted support and backing to properly conducted campaigns seeking to elevate midwifery standards and practices. Every conscientious physician, who is forced to lean upon untrained help in deliveries, should welcome all possibilities looking to improvement here. He should himself embrace every opportunity for coaching, at the bedside, such attendants in the rudiments of surgical cleanliness and of the dangers of meddling interference. It is to his own interests to try to bring to a higher level the more promising midwives in a community as well as to cooperate with the county health officer in seeing that the uncleanly or impossible material is refused recognition. A discussion of this problem, with suggestions as to minimum standards for midwives and methods of improving their bedside technic, is of sufficient importance to claim careful consideration at the hands of county medical societies. Through an even closer cooperation with the medical profession, the Health Department will endeavour throughout the coming year to further improve both the type of service and the personnel of this large and poorly trained group, whose services are now being utilised by one-third of the child-bearing women of this State. It is to be hoped that the special lecture courses in obstetrics, which have been planned by the officers of the State Medical Association and which are now being given to physicians at various points throughout the State, will quicken the sensibilities of the profession both to a keener appreciation of the magnitude of this problem and to a firmer resolve to give of its time and talent whatever it may take to bring about a betterment in a rather deplorable and neglected field.

J. N. B.

TYPHUS FEVER IN ALABAMA

The rapid rise in cases of endemic typhus (Brill's disease) in Alabama in 1932 and again this year presents a new problem in disease control. Each year, since Maxcy and Havens¹ described eleven cases of Brill's disease in Alabama, additional cases have been recognized. From 1925 to 1931, the number of cases reported varied from 48 to 80 cases. Last year there were 237 cases, with 12 deaths. For the first seven months of 1933, 269 cases have been reported with 12 deaths. Similar increases in cases have been reported from other southern states, notably Georgia.

In the earlier years, the recognition of typhus in Alabama and other states was slow, due to its occurrence in a class of the population not usually associated with typhus, that is, louse-free. The subsequent epidemiologic work of Maxcy^{2, 3} and Rumreich⁴ led to the conclusion that the transmission of endemic typhus was not from man to man by means of the body louse, as in the case of European or epidemic typhus, but that some other intermediate host, possibly rats or mice and their parasites, fleas or mites, served as a reservoir for the infection.

Laboratory work by Maxcy⁵ and others developed the immunologic relationship with Old World typhus and with Mexican typhus (tabardillo). In 1929, Maxcy further showed that the endemic strain of typhus was similar to that of Mexican typhus as relates to the lesions in guinea pigs. Later, Mooser, Castaneda and Zinsser⁶ recovered the virus of the endemic typhus from wild rats caught during an epidemic of typhus in Mexico City.

The stage was then set for working out the mechanism of the transmission of endemic typhus from rat to rat and from rat to man. This has been done in a series of studies by Dyer, Cedar, Rumreich, Badger

1. Havens and Maxcy: *Am. J. Trop. Med.* III: 495-507, 1923.

2. Maxcy, K. F.: *Pub. Health Rep.* 41: 2967-2995, 1926.

3. Maxcy, K. F.: *Pub. Health Rep.* 43: 3084-3095, 1928.

4. Dyer, R. E., Rumreich, A., and Badger, L. F.: *Pub. Health Rep.* 46: 334, 1931.

5. Maxcy, K. F.: *Pub. Health Rep.* 44: 589-600, 1929.

6. Mooser, Herman; Castaneda M. Ruiz; and Zinsser, Hans: *J. A. M. A.* 97: 231-232, 1931.

and others of the U. S. Public Health Service. Their work shows conclusively that the rat flea, especially *Xenopsylla cheopis*, transmits the disease from rat to rat, not through its bite, apparently, but by depositing infected feces, which are rubbed into the skin following the bite. The virus of the disease, however, will multiply in the flea itself, which obviously increases the work necessary to control the disease.

So far, the disease in this State has been confined largely to the counties of southeastern Alabama. Here it is widespread, being present in 21 counties, with the greatest incidence in Houston, Henry, Dale, Geneva, Coffee, Pike, Barbour, Conecuh, and Covington Counties.

In the light of the above scientific work and with the marked increase in reported cases last year, the State Health Officer requested the U. S. Public Health Service for assistance in laying out a program of control. The Surgeon General responded and with the financial assistance of the Rockefeller Foundation, in March of this year, there was established at Dothan a research station for continued studies, both of the disease in rats and of measures for control.

Recent canvass of the physicians in southeastern Alabama brought to light 118 additional cases, making a total of 475 cases up to September first. Control measures involving a rat extermination campaign are now under way in several counties. The medical profession of Alabama has been largely responsible for the early recognition of the endemic character of typhus in southern United States. The extensive laboratory service of the State made possible confirmation of the diagnosis. With the disease taking on an epidemic appearance, the State Department of Health must depend on the physicians through their weekly reports of communicable diseases for information on the human cases and the spread, if any, of the areas of infection. The doctors of the State can be of great help also in the campaign of rat extermination. This will not be an easy task. Rats are reported to have ten young to the litter and breed six to ten times a year. Not only must the rats be destroyed but their fleas must be killed as well. The situation presents a definite challenge to the physicians and county health departments of the State.

W. T. F.

EFFECTS OF HORMONES ON FUNCTIONAL MENSTRUAL DISORDERS

For many years the problem of how best to deal with functional menstrual disorders has been a constant challenge to gynecologists. Despite a vast amount of investigation, both clinical and experimental, of woman's menstrual and reproductive cycles, the etiology of this very common trouble is still obscure and its treatment continues to be highly unsatisfactory. Dilatation and curettage frequently fail to provide the promised relief. Thyroid medication undoubtedly has helped but only in a limited number of cases. Innumerable organ extracts, both singly and in many and various combinations, have been tried with disappointing results. Many of these glandular preparations, so highly lauded by their manufacturers, have been found to be inert¹ and there is evidence that theelin, now being so indiscriminately injected, is not without danger to the ovary.²

It has long been thought that both endometrial hypoplasia or hyperplasia and exaggerated and painful contractility of the uterine musculature play a part in menstrual dysfunction. And it is toward relieving these pathologic states that glandular therapy has been so long and so unsuccessfully directed.

In a recent preliminary report Wither-
spoon³ suggests that this problem be approached from a different angle. Functional menstrual disorders are apparently due to a disturbance of the normal balance between the ovarian hormones, oestrin and progesterin, and the anterior hypophyseal hormones, Prolan A and Prolan B. Wither-
spoon has treated twenty-five patients with functional disorders of menstruation by the injection of blood from pregnant donors and has studied them for eighteen months. The technic employed was to withdraw 10

1. Frank, Robert T.: The Role of the Female Sex Hormone. J. A. M. A. 97: 1852 (Dec. 19) 1931.

2. Ibid.

3. Wither-
spoon, J. T.: The Treatment of Menstrual Disorders by the Injection of Blood from Pregnant Donors, New Orleans M. and S. J. 86: 85 (August) 1933.

Novak, Emil: The Etiology and Treatment of Functional Uterine Bleeding, South. M. J. 25: 261 (March) 1932.

cc. of venous blood from the cubital vein of a woman in the early months of pregnancy, and to inject it immediately in the buttocks of the patient. The injections were given at weekly intervals when the treatment was indicated.

Eight cases of menorrhagia and metrorrhagia were treated as described above and "in every case the hemorrhage was successfully checked and the subjective symptoms markedly improved." Twelve cases of amenorrhea were treated and "in the . . . twelve cases definite flow returned in six patients, while the subjective symptoms improved in only a slightly greater percentage. I cannot stress too emphatically the psychic enthusiasm over the return of the menstrual flow. . . ." And the author adds, "it may seem paradoxical that the same treatment, used to check excessive uterine hemorrhage should be employed to start the menstrual flow, but the old axiom of "a thing is useful as long as it works" may be applicable to these conditions. Three cases of primary dysmenorrhea and two cases of menopausal disturbances were treated and showed favorable subjective results.

Witherspoon is careful to state that this is only a preliminary report and that "no attempt has been made to draw any conclusions, nor has this method of treatment been advocated to supplant others. . . ." But his work seems to indicate that the blood of a pregnant woman contains the best obtainable admixture of those hormones which are necessary to alleviate functional menstrual disorders. He also states that he plans in the near future to inject the serum of blood from pregnant women instead of the whole blood. His later reports will be awaited with interest.

W. W.

FRACTURES

Rarely before has it been so essential that practitioners in the field of general medicine have an immediately available store of information regarding fractures and their treatment. The rapidly increasing number of automobile accidents makes such knowledge a necessity. Once upon a time

fractures were the exception rather than the rule. These latter years have wrought a change in this somewhat axiomatic statement.

Articles on the subject are, therefore, timely. In this issue of the Journal, Shea deals with fractures of the bones of the face while Conwell discusses treatment of fractures in general. It must be agreed that restoration of features is a first consideration in the management of fractures of the facial bones; therefore, replacement of the bony fragments, though often a tedious process, is of primary importance. Dr. Shea details practical methods which he has found to be satisfactory in these exacting cases.

Dr. Conwell, in his contribution intended particularly for general practitioners, stresses standardized treatments. He calls attention to the fact that "the necessity for improved fracture treatment has been demanded in the last few years by the increasing number of fractures and their disabilities resulting from industry, automobiles, aeroplanes and all other technologic changes" and adds that "with this situation increasing daily it is paramount that the medical profession become better prepared to treat fractures". He urges immediate splinting to prevent local trauma and shock, the splinting to be that which is simplest, most effective, and most easily applied. Further, he lays emphasis on the use of roentgenograms, anteroposterior and lateral views, before reduction is attempted, both as an aid in determining position and as a protection for the doctor treating the case.

With the marked increase in the number of smaller hospitals located in the towns along our public highways, it behooves the general practitioner now more than ever to so equip and prepare himself as to be able to render an efficient type of service in this ever increasing class of cases as well as to clearly recognize unusual and complicating features demanding a more specialized service. No serums or vaccines have as yet been devised which will confer "immunity" upon the speed demon or his innocent victim. Consequently, the only alternative seems to be in a more adequate preparation for the meeting of each emergency as it presents.

(YARBROUGH ON CHRONIC ACIDEMIA: Continued from page 147)

stage, treatment is futile. All we can do is to point out what should have been done earlier in the illness. One must admit that there are so many manifestations and laboratory tests by which acidemia can be recognized early enough to direct effective treatment that there is very little excuse for the existence of this terminal stage of acidosis.

CONCLUSIONS

1. The most important cause of acidemia is the formation of acid radicals resulting from an excessive consumption of carbohydrates and alcoholic foods.

2. Acidemia is the underlying cause that paves the way for development of many serious ills. In this category we may include various toxic states—diarrhea, dysentery, colonic stasis, constipation, pellagra, rheumatism, indigestion, appendicitis, cholecystitis, nephritis, vascular hypertension, myocarditis, hysteria, hypochondria, neurasthenia, melancholia, toxic mania, etc.

3. Acidemia presents early gastro-intestinal and nervous symptoms by which the condition may be recognized in time to direct effective treatment. Hyperpnea, or deep and rapid breathing, is a late symptom for which we should not wait. The development of coma is a confession of diagnostic ignorance.

4. Various laboratory tests are of value in detecting the presence of acidemia. Through them is determined the extent of the depletion of the alkaline buffers. Tests that measure the carbon dioxide combining power of the blood plasma and the carbon dioxide tension of the alveolar air are the most valuable.

REFERENCES

1. Yarbrough, J. F.: Pellagra; Its Etiology, Symptomatology, and Treatment. *M. Rec.* 92: 892 (Nov. 24) 1917.
2. Yarbrough, J. F.: The Metabolic or Toxic Type of Chronic Arthritis and Its Relation to Chronic Acidemia. *Am. Med.*, New Series, pp. 979-984, December 1928.
3. Yarbrough, J. F.: The Etiology of Hypertension. *M. Rec.* 100: 362 (Aug. 27) 1921.
4. Yarbrough, J. F.: Chronic Acidemia. *Am. Med.* 20: 291 (May) 1925.
5. Yarbrough, J. F.: Carbohydrate Intolerance and Its Relation to Hypertension, Nephritis, Cardiovascular-Renal Disease, Pellagra, Rheumatism, Myocarditis, etc. *Therap. Gaz.* 46: 770 (Nov. 15) 1922.
6. Van Slyke, D. D. and Cullen, G. E.: Studies of Acidemia—I. The Bicarbonate Concentration of the Blood Plasma; Its Significance and Its Determination as a Measure of Acidosis. *J. Biol. Chem.* 30: 289, 1917.
7. Van Slyke, D. D.: Studies of Acidosis—II. A Method for the Determination of Carbon Dioxide and Carbonates in Solution. *J. Biol. Chem.* 30: 247, 1917.
8. Feinblatt, H. M. and Eggerth, A. H.: Clinical Laboratory Medicine, New York, William Wood and Co. 1925, p. 241.
9. *Ibid.* p. 83.

DISCUSSION

Dr. T. B. Hubbard (Montgomery): In presuming to discuss this paper, I am probably surprising some of you who know that I am neither a physiological chemist nor an internist. However, I have been interested in Dr. Yarbrough's ideas for many years and feel that certain aspects of his work are impressive.

In calling the condition "acidemia", I think Dr. Yarbrough has coined a word. When it is considered that acidosis and alkalosis seem to slide into each other, it may be that acidemia is an acceptable term. However, that is not what I am prepared to talk about. As to what the test is, whether the Van Slyke test or another is indicative of any clinical condition, I cannot say, but I do know this, which I have seen with my own eyes: Dr. Yarbrough has brought out a principle that is worth while, namely, a great many people are suffering with a carbohydrate toxemia.

When Dr. Richard Bright brought out his work, about one hundred years ago, on the disease which bears his name, the main fact that impressed all doctors was that there might be albumin in the urine. The result was that when they instituted treatment for nephritis they attempted to eliminate everything that had albumin in it. In this country, men in New York, Baltimore, and other cities followed their example.

Then came Mr. Kellogg of Battle Creek with breakfast foods. America is full of these and other carbohydrates; therefore, instead of a meat or an albumin toxemia many people have the end results of an excessively high carbohydrate diet. Dr. Yarbrough has realized this and has changed them to a protein diet where indicated.

Whether his theory is in accord with the facts of physiological chemistry, we must give him credit for the ideas he has brought to us. As he has said, we need to get away from carbohydrate diets.

Dr. Yarbrough (closing): Acidemia is a real condition that confronts us every day and should be more readily recognized. A person with a blood stream filled with toxic poison is a candidate for some kind of pathology. The surgeon who operates on a patient with a Van Slyke below 45, except in case of emergency, is subjecting the patient to needless peril. When the Van Slyke test becomes a procedure of general routine, the percentage of recoveries will be greatly augmented.

I want to thank Dr. Hubbard for his sympathetic discussion of my paper.

DEPARTMENT OF PUBLIC HEALTH

BUREAU OF ADMINISTRATION

J. N. Baker, M. D.,
State Health Officer in Charge

TUBERCULOSIS IN A RURAL COUNTY IMPORTANCE OF ISOLATION

Contributed By
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Tuberculosis is one of Covington County's public health problems. In fact, it is a major problem, has been through the years, and still remains one. A disconcerting aspect of it is that, in all probability, the day is not near when the number of arrested cases will balance the number of new cases found. Of course there will be some complete cures but many factors militate against success in this regard. For example, cases receive late diagnosis; poverty in many instances prevents proper care and treatment; and heavy responsibilities, that delay recovery, are present in about one-half of the county's known cases. It follows, therefore, that new cases will continue to exceed arrested and cured cases unless the problem is attacked vigorously and without intermission.

Of the 105 cases on record in this office, 90 are in rural areas. These people and their families are already in financial distress; food and clothing are insufficient. It is difficult to instruct a tuberculous patient as to proper management in the face of such odds. If he is the bread winner, he must work for his family. If she is the mother, she must take care of the children. If the patient is a young adult, he is living with the rest of the large family. Sanitarium treatment is out of the question. To make the problem more difficult of solution, people in our rural section are not so well educated in matters of hygiene as are the residents of our municipalities. Our rural tuberculosis, therefore, is of graver significance to us than is that in the towns of the county.

From a public health standpoint, we are particularly interested in the isolation of the case to prevent further infection in the

home and community. It is our responsibility to see that the case is so managed that contacts thereto are protected. This is not always easy. A case of tuberculosis is of long duration usually; unless the patient is very cooperative, advice and suggestions on hygiene and prevention will fail, with results known to all.

A tuberculin clinic, which we held recently, is of significance. Briefly outlining this survey and clinic, we find the following:

Active cases on record at present	105	
Suspected cases on record.....	22	
Contacts of these cases.....	420	
Number contacts reporting to tuberculin clinic	189	
Negative reactions	108	
Not returning for test reading	13	
Positive reactions		68
Trace positive	18	
One-plus positive	11	
Two-plus positive	16	
Three-plus positive	14	
Four-plus positive	9	68

It is not surprising to note that the positive reactions ran in families, as a rule.

The 105 active cases and 22 suspects on our records are by no means the extent of the infection in Covington County. There are, perhaps, scores of cases unreported; many have never consulted a physician. These and the results of the tuberculin clinic do not make a happy picture. Unfortunately at the present time we cannot have suspicious contacts followed through in our diagnostic clinics with special chest examinations and the important x-ray. The chest clinics have been discontinued on account of severe reduction of funds in the State Health Department, a circumstance to be deplored since we feel that although chest examinations might be negative, the x-ray would expose activity in many of these contacts. Constant instruction of patients, suspects and contacts, regarding check-ups on the condition of the latter group by chest examination, frequent visits to cases, and education of these people

regarding dangers of carelessness will perhaps save many of contacts from falling in line with our active case records. These are responsibilities of the Health Department of Alabama and its county units.

Isolation of the case is a splendid first step to take in an attack on "The White Plague". In rural homes of Covington it is difficult to absolutely isolate a case for reasons which are obvious. Therefore, a cottage on the premises for the active case would be ideal, provided it could be constructed at reasonable cost, with proper ventilation, and protection from unfavorable climatic conditions. A modified Burr cottage (see figures), adapted to our conditions, and now being recommended by us, is ideal for these requirements. This cot-



tage is constructed with the idea in mind of having sufficient room for one patient, but no space available for visitors. Thus is more complete rest assured. There is no room for extra furniture. The bed is the only piece of furniture permitted in the cottage. The floor is designed so that cleaning is easily done. It and the walls are painted with a good grade of apple-green paint. This color is selected because green is restful to the eyes. When a patient moves out, or dies, the floors and walls are repainted. The solid portion of the side walls are only twenty-four inches above the floor, allowing the patient to see everything happening outside, without any effort. The screening of the cottage is of good 16-mesh wire.

The Covington County Health Department obtained the original plan from the Health Department of Pike County, Mississippi, where this type cottage is being used.

The only essential modification in the plan is the substitution of wooden shutters for the canvas sides. The canvas, in our opinion, is not as durable nor as permanent as the wooden shutters. The dimensions of the building are: width—6 feet; length—8 feet; and height, from floor to ceiling, 7 feet.*

After securing the plan, we approached the County Board of Revenue for sufficient appropriation with which to construct two of these houses for use in indigent cases. The money having been made available, the Health Department supervised their erection. Both are now in use in the County. The major purpose of this primary step is to place before the people an inexpensive method of isolation. We believe that, be-



cause of this initial step, several cottages will be constructed in the county, the cost to be borne by the individual. In this way our great problem of isolation of dangerous active cases will be partially solved. Based on the present prices of material and labor, the two cottages which we have constructed cost approximately \$45.00 each. The labor was done by a contract carpenter.

What is the future of tuberculosis control in Alabama? This will depend largely on the degree of cooperation between the organized profession and the several health departments. Such cooperation will embrace proper and early reporting of suspected and active cases by physicians; and education of the general public by the Health Department. It is a problem that both agencies should attack in happy uni-

*Further details (bill of materials, etc.) may be had on request from the Covington County Health Department, Andalusia.

son to the end that there may be a further decrease in tuberculosis.

SUMMARY

1. Tuberculosis is a problem, particularly in rural counties, because of late diagnosis, financial distress and heavy responsibilities, in many instances.

2. Among the 105 cases in Covington County, approximately 90 are in rural areas.

3. Isolation of the active case is the primary step to take in controlling the spread of infection. For the purpose a modified Burr cottage is proposed for patients financially unable to go to a sanitarium or hospital.

4. Contacts, positive on tuberculin test, should have a thorough chest examination, including x-ray, to determine if activity is present.

5. Cooperation between the organized profession and the health department will be the steering gear of the future tuberculosis control program in Alabama.

BUREAU OF LABORATORIES

James G. McAlpine, Ph.D., Director

AGGLUTININS*

THEIR SIGNIFICANCE IN CERTAIN DISEASES

1. Introduction

Since Gruber and Durham¹ (1896) demonstrated the specificity of the agglutination reaction, it has received wider and wider application in the public health laboratory. A diagnosis of undulant fever, Brill's disease, Rocky Mountain spotted fever, tularemia and the enteric diseases is often confirmed by this test. However, as in every other serologic reaction, the agglutination test has its limitations, and the interpretation of its results are at times a difficult problem.

If the causative microorganism can be isolated from the patient and subsequently identified by microscopic, biochemical, and serologic means, the ideal laboratory diagnosis is attained. Nevertheless, this is impracticable in some diseases and relatively uncertain in others. In undulant fever there are many cases in which it has been

impossible to isolate any variety of the *Brucella melitensis* group although the clinical findings and the serologic tests indicate the disease. In tularemia the high infectivity of *B. tularensis* to laboratory workers combined with its fastidious growth requirements has rendered this method not feasible for routine practice. In Brill's disease and Rocky Mountain spotted fever, the etiologic factors are considered to be members of the Rickettsia group which have so far defied the ordinary cultivation technique. Hence, it is in these diseases that the agglutination test, performed by mixing the patient's blood serum with a known microorganism, has been an invaluable adjunct to clinical findings in rendering a final diagnosis.

Since the results of the agglutination test are always reported in terms of dilution, it is a matter of great importance to determine in each disease the lowest dilution which should be considered significant. Unfortunately, there is a wide divergence of opinion on this question and in individual cases laboratory results must always be correlated with clinical findings before the proper conclusions can be reached. As stated by Havens and Mayfield² (1931) "the clinical interpretation of a single observation is always a difficult matter."

In any discussion of significant dilutions, the importance of normal agglutinins becomes apparent. It is known that the blood of supposedly healthy individuals may in some cases agglutinate one or more of the pathogenic microorganisms. There are two explanations of this phenomenon. One is that these agglutinins are produced by a specific antigenic stimulus, i. e., when typhoid agglutinins are present there has been or is an invasion of the body by *B. typhosus*. The other theory is that a stimulus by one microorganism may cause agglutinins to be set up for other bacteria which may have no relationship to the real invader.

Havens and Mayfield² (1931) are inclined towards the first explanation from their study of 1,136 serums which had been received for the Wassermann reaction at the Bureau of Laboratories, Alabama State Department of Public Health. They found that 23 per cent gave complete agglutination with *B. typhosus* in the 1:40 dilution

*First of a series on the subject. The next will appear in an early issue of The Journal.

or higher. They concluded "(1) that agglutinins develop as a result of specific exposure under natural conditions, even without a clinical infection, and that in the absence of the antigenic opportunity such antibodies do not develop; (2) that agglutinins rarely are found for infections which are known to have a low incidence; and (3) that so-called 'normal' agglutinins behave in the same manner as, and are in all respects indistinguishable from, specific antibodies". Their results are corroborated by the fact that the serum of the newborn baby is, as a rule, free from agglutinins. They add, however, that in some cases the reproduction of apparently unrelated antibodies are stimulated by certain infections.

McAlpine and Mickle^{3, 4} (1928) reported the examination of two series of Wassermann samples, each over 10,000 in number for the agglutinins of *Brucella abortus*. Only 0.6 per cent gave reactions in the 1:100 dilution or higher, and only a small number of the patients showed any characteristic symptoms of undulant fever. This survey was made in a state in which the cattle herds were known to be heavily infected with *Brucella abortus*, and it is thought that many cases of undulant fever are contracted from milk and milk products. Hardenbergh⁵ (1928) reported a similar survey in which 4,766 Wassermann samples were examined and his results showed only 0.8 per cent positive in dilutions which could be considered significant. Although the populations which were included in both of these surveys had ample opportunity to contract the disease, it will be seen that the number which showed an appreciable amount of agglutinins was very low. In experimental animals *Brucella melitensis* and its varieties are extremely antigenic, and with so large an amount of infection, we would naturally expect a greater percentage of individuals to show the reaction in high dilutions. However, there are many unexplainable factors in the epidemiology of undulant fever.

Gilbert and Coleman⁶ (1930) reported their findings in 150 cases of undulant fever. The serums of 24 of these patients reacted with *B. typhosus* in dilutions of 1:40 or higher and in some of these there was a fluctuating titer during the course of the disease. Here, the only feasible explanation

is that a non-specific production of antibodies occurred. They concluded that "the results of the agglutination reaction with typhoid bacilli must be interpreted in the light of clinical manifestations or of bacteriologic findings, since it has been shown that agglutination may be encountered in specimens collected from patients during febrile diseases other than typhoid fever, even though the patients have never received typhoid vaccine nor to their knowledge had typhoid fever and that a fluctuation of the agglutination titer, considered by some as definite evidence of typhoid fever, may occur in cases in which this infection is quite definitely excluded."

Therefore, as Zinsser⁷ (1931) has stated, "in carrying out diagnostic tests with the serum of a patient against a known microorganism as in the diagnosis of typhoid, undulant fever, etc., it is of the greatest importance to know statistically the likelihood of normal agglutinins in human sera against the organism used". It is with this thought in mind that the present and subsequent articles have been written. While each case is an individual problem and the laboratory results must be correlated with the clinical findings it is believed that a summary of the opinions of the workers in the various fields will be of some assistance to the attending physicians.

REFERENCES

1. Gruber and Durham: Munich Med. Woch. 1896.
2. Havens and Mayfield: J. Prev. Med. 5: 295, 1931.
3. McAlpine and Mickle: Am. J. Pub. Health 18: 609, 1928.
4. McAlpine and Mickle: Undulant Fever Symposium, A. P. H. A. 1928.
5. Hardenbergh: Certified Milk, 2: 1928.
6. Gilbert and Coleman: J. Infect. Dis. 46: 311, 1930.
7. Zinsser: Resistance to Infectious Diseases, 4th Edition. The Macmillan Company, 1931, New York.

Poliomyelitis—Although the exact method of transmission of poliomyelitis has not been worked out it is generally considered to be an air-borne infection and by articles soiled with discharges from the nose and throat or with feces. Healthy carriers and mild and unrecognized cases are responsible to a certain extent for the spread of the disease.—Pittsburgh's Health, September 1933.

BUREAU OF SANITATION

G. H. Hazlehurst, Director

DIVISION OF INSPECTION

MILK MARKETING AGREEMENTS

The general economic conditions of the past eighteen months or two years have naturally affected the dairy industry, as well as other lines of business. In addition, however, they have had a sinister effect not generally appreciated.

The quality of the milk sold, as regards bacterial content, has been well maintained. No outbreaks of communicable disease, traceable to milk, have occurred. But, that barrier of defense consisting of those precautionary measures which are included in the term "dairy sanitation" threatens to become in many cases seriously impaired. Financial inability to make necessary repairs or to replace worn-out equipment; curtailment in purchases of ice, with resultant inadequate cooling; underpayment of employees, or the employment of untrained help;—these are the factors which have breached the defenses against infection so that the industry is far more subject to responsibility for a disastrous outbreak of illness than is comfortable.

The health machinery of the State, which has an immediate and vital concern in all phases of the dairy industry, appreciates to the fullest the financial difficulties with which both the producers and the distributors have been faced and has endeavored to lighten the burden in every possible way consistent with the safeguarding of the public health. It is to be regretted that just at this particular time, when the industry finds itself financially embarrassed and in need of constructive help from the Health Department, it, too, because of a much reduced personnel, finds itself unable to render the aid and supervision which so important an activity warrants. We can only hope that there will soon be a rapid restoration of general business conditions in which both the dairy industry and the Health Department may liberally participate.

Any combination of circumstances which will tend to reduce the cost of milk production or distribution, or which will increase

the net income of milk producers and distributors has, therefore, a rather direct influence upon the safety of milk supplies, because it enables dairymen to make improvements and replacements prescribed by the milk regulations.

It is for this reason that the Division of Inspection has taken an active part in the organization of dairymen's associations, the adoption of codes of fair practice, and the establishment of bottle exchanges in Montgomery and Mobile. Dairymen have also been organized in Anniston, Decatur, Dothan, Florence, Gadsden, Huntsville, Opelika (Chambers, Lee, and Macon Counties), Sheffield-Tuscumbia, Talladega County, and Walker County.

The Division is also lending its aid to the dairy industry in the formulation of trade agreements to be submitted to the Agricultural Adjustment Administration for approval. The licensure of all milk dealers, and the revocation of the license of any person or firm violating any provision of the signed trade agreement will go far toward stabilizing this industry, which is so essential to the welfare of the citizens of this State.

C. A. A.

CURRENT STATISTICS

*PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA

	July	August	Estimated Expectancy August
Typhoid	157	123	290
Typhus	133	87	11
Malaria	335	589	712
Smallpox	0	1	8
Measles	115	36	56
Scarlet fever	50	64	73
Whooping cough	169	80	107
Diphtheria	46	113	91
Influenza	22	33	26
Mumps	20	10	24
Polio-myelitis	1	1	4
Encephalitis	3	2	1
Chickenpox	19	2	12
Tetanus	5	6	7
Tuberculosis	291	285	396
Pellagra	96	37	79
Meningitis	4	1	4
Pneumonia	56	42	61
Syphilis (private cases)	215	181	157
Chancroid (private cases)	1	0	9
Gonorrhea (private cases)	208	172	214
Ophthalmia neonatorum	1	1	1
Trachoma	0	0	1
Tularemia	0	0	0
Undulant fever	0	1	2
Dengue	2	2	2
Rabies—human cases	1	1	0
Positive animal heads	69	51	—

*As reported by physicians and including deaths not reported as cases.

The Estimated Expectancy represents the median incidence of the past nine years.

PROVISIONAL MORTALITY STATISTICS

Alabama, July 1933

CAUSE	Number of Deaths Registered July 1933			Annual Rate per 100,000 Population		
	White	Colored	Total	July 1933	July 1932	July 1931
ALL CAUSES	1126	1023	2149	923.3	963.0	958.6
Typhoid fever	10	12	22	9.4	9.1	13.1
Smallpox						
Measles	1	1	2	0.9		0.9
Scarlet fever	2		2	0.9		
Whooping cough	11	6	17	7.3	9.6	1.7
Diphtheria	4		4	1.7	3.0	2.2
Influenza	3	12	15	6.4	4.8	7.4
Pneumonia, all forms	34	22	56	24.1	28.3	31.0
Poliomyelitis	1		1	0.4		1.7
Tetanus	2		2	0.9	0.4	1.3
Tuberculosis, all forms	57	104	161	69.2	80.5	73.5
Tuberculosis, pulmonary	49	91	140	60.1	74.4	65.2
Malaria	7	12	19	8.2	7.8	11.4
Cancer, all forms	87	28	115	49.4	53.5	44.6
Diabetes mellitus	14	3	17	7.3	13.5	8.7
Pellagra	21	20	41	17.6	14.8	19.3
Cerebral hemorrhage, apoplexy	65	62	127	54.6	60.1	48.6
Diseases of heart	139	133	272	116.9	114.9	111.2
Diarrhea and enteritis						
Under 2 years	62	20	82	35.2	32.6	49.0
2 years and over	27	11	38	16.3	12.2	9.6
Nephritis	92	77	169	72.6	99.7	79.2
Puerperal state, total	21	17	38	16.3	12.6	20.1
Puerperal septicemia	6	4	10	4.3	4.3	11.4
Congenital malformations	8	5	13	5.6	6.5	4.8
Congenital debility and other diseases of early infancy	77	54	131	56.3	52.7	54.7
Senility	20	25	45	19.3	14.4	14.0
Suicides	16		16	6.9	7.8	5.7
Homicides	17	34	51	21.9	21.8	27.1
Accidental burns	3	5	8	3.4	3.9	1.7
Accidental drownings	7	10	17	7.3	12.2	8.7
Accidental traumatism by firearms	2	2	4	1.7	3.9	3.9
Mine accidents	3	3	6	2.6	0.4	1.7
Railroad accidents	8	6	14	6.0	4.8	2.6
Automobile accidents	25	12	37	15.9	13.5	13.6
Other external causes	33	12	50	21.5	27.4	24.5
Other specified causes	178	139	317	136.2	159.3	166.3
Ill-defined and unknown causes	70	170	240	103.1	76.6	94.1

Truth About Medicines

ACCEPTED DEVICES FOR PHYSICAL THERAPY

The following apparatus has been accepted by the Council on Physical Therapy for inclusion in its list of accepted devices for physical therapy:

Oxygenaire.—The Oxygenaire is recommended by the firm as satisfactory for use whenever oxygen therapy is indicated. Unlike other oxygen tents examined by the Council, this unit is not provided with a motor-fan assembly or an injector for circulation of the oxygen-rich atmosphere. It depends on its energy for circulation by convection currents generated by melting ice in the chamber on one side and the heat of the patient in the tent proper on the other, between which there is free communication of air mixture. Smoke tests indicate a satisfactory circulation of air within

the tent, depending on the amount of ice in the chamber. Temperature and humidity were very well controlled in test cases of patients having pneumonia, heart failure, edema of the lung due to drowning and also in tests on normal subjects. Like all oxygen therapy apparatus, accurate check on the concentration of oxygen and carbon dioxide must be made regularly to insure the proper control. American Hospital Supply Corporation, Chicago. (Jour. A. M. A., September 9, 1933, p. 853.)

PROPAGANDA FOR REFORM

Bacteriophage Water Purification.—Both proponents and opponents of the environmental bacteriophage sterilization theory have resorted to little more than dialectic evidence. The currently reported crucial tests by Prof. Paul J. Beard of the sanitary engineering department at Stanford University, therefore, are a timely service to the clinical profession. They represent the type of work that should have been undertaken a decade ago, before the speculative pros and cons had been given such wide publicity. In none of these tests did the bacteriophage show the least effect on the corresponding bacteria. Moreover, none of the exposed bacteria became phage resistant. Professor Beard concluded that "the experiments simulate adequately the natural conditions under which bacteriophage must function if it is to participate significantly in the reduction of bacterial numbers in polluted water or in sewage. (Jour. A. M. A., September 2, 1933, p. 782.)

Organic Luetin Not Acceptable for N. N. R.—The Council on Pharmacy and Chemistry reports that Organic Luetin (The Abbott Laboratories) is stated to be an extract of syphilitic testicular tissue of rabbits infected with the Nichols strain of *Spirochaeta pallida*. It is proposed for diagnostic use as a skin test "in acute, chronic and congenital syphilis, especially where the Wassermann reaction yields falsely negative results." A control solution, which is an extract of normal testicular tissue of the rabbit, is supplied. After consideration of the evidence for the value of the product, the Council held Organic Luetin unacceptable for New and Nonofficial Remedies because of lack of sufficient evidence for its

value and safety and because further experimental work is required before its general use is to be recommended. A report of the Council's consideration was sent to the Abbott Laboratories, and as a result the firm stated that, pending the outcome of experimental work being carried on, the advertising and promotion of the product would be discontinued and no further quantities would be manufactured. The Council commended the Abbott Laboratories for its decision. (Jour. A. M. A., September 16, 1933, p. 929.)

Phenanthrene.—Dr. Lyndon F. Small of the University of Virginia and Dr. Nathan B. Eddy of the University of Michigan are engaged under the auspices of the Drug Addiction Committee of the National Research Council in a systematic chemical and pharmacologic study of morphine and its derivatives and of substances synthesized from phenanthrene. Phenanthrene is a comparatively simple substance which is obtained from anthracene in oil. A partially hydrogenated phenanthrene forms the skeleton, to which are attached the active groups of the morphine molecule. Phenanthrene itself, however, is a but poorly soluble substance of very low toxicity and produces only a mild degree of depression in the animal body much like that following a small dose of a barbiturate. Aside from its very weak depressant action, the effects of phenanthrene in no way resemble those of morphine. (Jour. A. M. A., September 16, 1933, p. 950.)

The Designations "Food Concentrate" and "Scientific Food Concentrate" for Foods.—The Committee on Foods reports that the terms "food concentrate" and "scientific food concentrate" are common designations in current advertising for food mixtures consisting mainly of sucrose, malt extract and cocoa, with a relatively small proportion of dried milk or skim milk and possibly a small quantity of dried egg. These mixtures are used chiefly for preparing chocolate and malt flavored, sweetened milk drinks. The designations are used, implying a direct process of concentration in the manufacture of the foods concerned, are unnecessary for describing the products, are likely to be misunderstood by the public, are not informative, incorrectly

convey the meaning of extraordinary food value, and are misleading by implication. The term "concentrate" should be reserved for concentrated solutions of flavors of fruit juices which must be diluted for use, for highly potent vitamin preparations, or for concentrated extracts of foods which are recognized technically as concentrates and for which the products the term "concentrate" is not misleading in fact or by connotation. (Jour. A. M. A., September 23, 1933, p. 1000.)

Valerian in Therapy.—Today valerian is recognized as having but little virtue, if any, in disease, such power as it has being largely psychic effects resulting from the impression created by its appeal to the sense of smell. Now attention is again called to this preparation by the fact that the health commissioner of New York has placed the sale of valerian and all its derivatives under strict control, so that they may now be sold only on prescription by licensed physicians and veterinarians. Strangely, however, this control is exercised not because of any remarkably potent value or any lack of virtue attaching to valerian in the field of medicine but simply because its odor is so all pervading, so penetrating and obnoxious that it has come to be the chief constituent of what is commonly called a "stink bomb". Thus the control of valerian is not induced by its medical uses but is instead to be a curb on racketeering in which "stink bombs" constitute a significant part of the materia racketeeria. (Jour. A. M. A., September 23, 1933, p. 1004.)

Lash-Lure.—A number of cases of severe poisoning, including one case of blindness, have been reported from the use of a so-called "Eye Brow and Lash Dye" sold by a Los Angeles concern under the trademarked name "Lash-Lure". The indiscriminate distribution of dangerous drugs by irresponsible persons again emphasizes the need of an extension of the powers of the National Food and Drugs Act. Lash-Lure, according to the A. M. A. Chemical Laboratory, contains a dye of the aniline type. The dangers of using hair dyes of the aniline type, even on the hair of the scalp, is well known to all reputable beauty parlors, and usually such dyes will not be applied if the patient exhibits any sensitivity to the sub-

stance. Yet in Lash-Lure we have a potentially dangerous product sold to be applied to the eyelashes. Whether the victims of this preparation have redress at law against either the exploiter of Lash-Lure or the individual beauty parlors responsible for applying it is a matter for the courts to decide. However, money is a poor recompense for the loss of sight. (Jour. A. M. A., September 23, 1933, p. 1016.)

Dinitrophenol, A Metabolic Stimulant.—Cutting, Mehrtens and Tainter of Stanford University have reported on the actions and uses of dinitrophenol (1:2:4), a preparation with the apparently remarkable power of stimulating metabolism enormously, producing pyrexia, and without such deleterious symptoms as would result from equivalent doses of thyroid gland. A drug with the potency and effects of dinitrophenol is a two-edged sword with appalling possibilities for harm as well as for good. As a result of their investigations of the product, the investigators suggest as possible uses its application in myxedema to control the symptoms that result from insufficient metabolism in that condition. They find it especially valuable in obesity, although, as has been shown in several articles recently published in The Journal A. M. A., it is possible to obtain the maximal weight loss by dietetic bookkeeping, controlling the food intake alone. Because of its action in producing pyrexia, it offers opportunity for study in relationship to fever treatment of various conditions. (Jour. A. M. A., July 15, 1933, p. 213.)

Miscellany

RICHMOND MEETING SOUTHERN MEDICAL ASSOCIATION

November 14-17, 1933

With every prospect of a banner meeting, the Southern Medical Association moves on to Richmond for its next annual convention, beginning on the 14th and extending through the 17th of November.

Probably at no time in the history of the nation has solidarity of effort and thorough accord of spirit been more necessary than at this moment when the clouds of the devastating depression seem to be breaking. The physicians of the South, always alert

to opportunities and obligations, can "do our part" just now in no more effective way than by bringing to one another the stimulus that flows from the companionship, from the broadening of ideas, from the actual dissemination of new thought that always mark the sessions of this great organization.

It seems fitting that this girding of the medical forces of the South for the New Day that is dawning should occur in the capital of the Old Dominion, the focal point of so many stirring events in the history of the United States. Today a metropolitan area of wide dimensions and a medical center of real note, Richmond, of a yesterday that reaches back to the dawn of English occupancy of this continent, is filled with memorials of great names and greater deeds that, along with its natural beauties, lend it a lure, a charm equaled by few other American cities. To these physical and historic embellishments it adds a warmth of hospitality that assures a genuine and winning welcome to our Association.

In behalf of the profession in this city as expressed by your host, the Richmond Academy of Medicine, we extend to the physicians of the South cordial greetings and expression of our earnest desire to have you with us during these notable sessions. General and sectional programs have been admirably arranged and the clinics and scientific exhibits will offer demonstrations of lively interest. Local committees will spare no effort to contribute to the comfort and convenience of the delegates and such guests as may accompany them. The social diversions offered by the city will be very engaging and the points of interest here and in the surrounding territory will lead you into many delightful byways. Let us hope, then, to see you among this great host. It will be our pleasure to solve your problems of transportation, of hotel reservations, or of anything else that may be bothering you. If you have established no other contacts, the undersigned will be very gratified indeed to receive your communication and direct it into the proper channel for immediate action.

Joseph F. Geisinger, M. D.,
Chairman, Publicity Committee,
Stuart Circle Hospital, Richmond, Va.

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TRAUMATIC ARTERIOVENOUS ANEURYSMS*

By
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Birmingham, Ala.

Arteriovenous aneurysms, first described by Wm. Hunter in 1757, resulted so frequently from wounds received during the World War that one German surgeon, Hans Haberer, states that he observed and treated 243 cases.¹

The promiscuous use of firearms and cutting weapons in civil life continues to supply a considerable number.

Arteriovenous aneurysms may be congenital or acquired. The congenital cirroid aneurysm is the most familiar of the former type. Of the acquired, the rupture of an aneurysm into the accompanying vein is an example of one type; the traumatic, due to gunshot, stab, and other wounds, is another, and the commonest type. Matas states that the traumatic variety supplies about 95% of the cases which come under the care of the surgeon, and we will confine our discussion to these.²

Pulsating exophthalmos, resulting from rupture of the internal carotid artery into the cavernous sinus, is a type of traumatic arteriovenous fistula differing so much from other varieties, both as regards symptoms and treatment, that it will not be considered at this time.

In any arteriovenous fistula or aneurysm between vessels of the larger size, three groups of symptoms may be found: 1. Local; 2. Peripheral; 3. Central or Systemic.

LOCAL SYMPTOMS

The local symptoms are a thrill, most intense at the site of the communication, and

a bruit, likewise most intense at the site of the communication but transmitted by the blood stream over wide areas. Pain may or may not be present. There may be a pulsating and expansile tumor, in which case the condition is known as a varicose aneurysm, or the communication may be direct when it is known as an aneurysmal varyx.

PERIPHERAL SYMPTOMS

Peripheral symptoms are those which are noted distal to the point of abnormal communication and vary with the degree of impairment of the peripheral circulation and the efficiency of the collateral circulation.

In an extremity there may be edema, varicosities, and ulcers. In long standing cases the extreme size of the swelling and of the varicosities may render the patient helpless. The gravest danger is the development of gangrene. This may involve small areas, or may cause the loss of the limb.

CENTRAL OR SYSTEMIC EFFECTS

The central symptoms are those which involve the heart and vessels proximal to the site of the fistulous communication.

Local and peripheral symptoms have long been recognized, but only within recent years has it been realized that the cardiovascular disorders, so often found in association with arteriovenous aneurysms, were due to the presence of the fistula. It was formerly thought that they were antecedent and independent disturbances.

Cazamian,³ in 1917, was the first to call attention to the relation of the fistula to the circulatory disease. Since the appearance of his publication, clinical observations and experimental work have confirmed his claims. Notable among those who have contributed to the establishment of this relationship are Matas, Halsted, Reid, Barney Brooks, Holman, and Makins.

3. Cazamian: Quelques Considerations sur le Retentissement Cardiaque et Circulatoire d'un Aneurisme Arteriovenaux d'Origine Traumatique des Vaisseaux, Bull. et mem. Sec. Med. d. hop. de Paris, 12 Janvier 1917, p. 46.

*Read to the Association in annual session, Montgomery, April 20, 1933.

1. Haberer, H.: Aneurysm Interesting From Clinical and Operative Viewpoints, Deutsche Ltschr. f. Chir. 196: 215-219, '26.

2. Matas, R.: On the Systemic or Cardiovascular Effects of Arteriovenous Fistulae, Tr. South. Surg. A. 36: 623-677, '23.

Heart lesions have followed fistulae experimentally produced and have been cured when the fistulae have been closed. Clinically, cardiovascular symptoms have been entirely cured or vastly improved when the fistula has been closed by operation.

The cardiovascular changes, in the main, are dilatation of the artery proximal to the fistula, the development of circulatory and blood pressure changes, hypertrophy and dilatation of the heart, and the development of a condition simulating aortic insufficiency.

The main factor in the damage to the heart, as Reid⁴ points out, is the increased amount of blood which it has to handle. This results from the quick shunting of large quantities of arterial blood directly into the vein and thence to the heart.

The systemic effect will depend upon the degree of cardiac impairment which may develop. In many instances the heart lesions are well borne as in other types of heart disease. Under certain conditions, however, rapid decompensation sets in and the picture becomes one of advanced heart disease.

Matas² says that "the larger the vessels, the closer the fistula to the heart, and the longer the duration of the fistula, the more rapid and severe will be the central or constitutional symptoms."

Blood pressure is usually low, the diastolic especially so; and that of the involved side is lower than that of the opposite side.

Where the fistula is accessible to compression, two interesting phenomena can be demonstrated; the bradycardiac sign, known as Branham's sign, and the blood pressure behavior.

When the flow of blood through the fistula is shut off by pressure at the site of the fistula or on the artery above the fistula an immediate drop in the pulse rate takes place, and the blood pressure, both systolic and diastolic, rises.

Influence of the vagus nerve is responsible for the fall in pulse rate and, when this is inhibited by large doses of atropine, the phenomenon does not appear. The rise in blood pressure is explained on the ground that when the large arterial stream is emp-

tied directly into the venous system without traversing the capillary system, it loses the resistance offered by the small vessels and the pressure is correspondingly lowered. When the fistula is closed by pressure, the blood is redirected through the small peripheral vessels and capillaries and an immediate rise takes place.

TREATMENT

Formerly, most of these cases were not interfered with, but active surgical treatment has justified itself as the proper course.

This has been brought about by better technic in vascular surgery; from a better understanding of the methods of developing and maintaining a collateral circulation; from a realization of the dangerous cardiac changes which follow the development of arteriovenous fistulae; by reason of the fact that there are few spontaneous cures; and by the excellent results which have followed surgical intervention.

The indications for operation have been very clearly outlined by Reid⁴ who says "In some cases, hemorrhage, increasing hematoma, infection, and, very rarely, acute cardiac symptoms make it necessary to operate soon after the injury. When none of the foregoing complications make operation imperative, delay presents the following advantages:

"1. A good collateral circulation develops which permits excision of the fistula without the fear of gangrene.

"2. The injured vessels become thoroughly healed, making their dissection easier and safer.

"3. Infection is less likely to occur.

"4. Spontaneous healing may take place."

Matas² warns, in those cases where cardiac symptoms are marked and progressive, that operation be not delayed until the patient becomes a hopeless cardiopath.

Procedure: The essential feature of every operation for cure of an arteriovenous fistula is to close the abnormal communication between the arterial and venous systems.

This may be accomplished, usually, by one of four methods:

1. Division of the communicating channel with lateral suture of artery and vein.

2. Transvenous suture of the arterial opening.

4. Reid, M. R.: The Effect of Arteriovenous Aneurysms Upon the Heart, *Tr. South. Surg. A.* 44: 356-367, '31.

3. Quadruple ligation of vessels above and below the fistula, with ligation of all communicating branches and excision of the involved segments.

4. Endo-aneurysmorrhaphy.

Ligation of the artery alone will rarely result in cure, though Matas⁵ reports one such case, and a few others are on record. Spontaneous cure is occasionally observed. Reid⁶ reports such a case.

To guard against hemorrhage, it is necessary, in every instance, that the artery and vein be temporarily occluded above and below the fistula before any attempt is made to separate the vessels or to open the lumen of the artery or the vein. Local anesthesia should be employed whenever possible.

Presentation of four cases recently under my care will illustrate most of the points in diagnosis and treatment which have been discussed.

Case 1

Arteriovenous Aneurysm

Right Common Femoral Artery and Vein

Julius M., colored male, single, aged 23, Hillman Hospital, No. 73341, was stabbed in the right groin on March 2, 1931. Gangrene of the leg resulted necessitating amputation of the thigh in June, 1931, in Tuscaloosa, Ala., where he had been confined in a hospital since the receipt of his injury.

He was admitted to the Hillman Hospital on February 22, 1932 on account of pain in the stump.

Examination revealed a well healed amputation of the lower third of the thigh with an arteriovenous aneurysm high in the groin.

Local symptoms: Thrill and a widely distributed bruit; small wound of entrance of knife below and to the inner side of the anterior superior spine of the ilium. He complained of pain in the stump.

Peripheral symptoms: Amputation had already taken place on account of gangrene.

Central symptoms: A somewhat enlarged heart, with blood pressure 160/70. This was a much higher pressure than one would

expect in a healthy man of 23. The pulse was 88; Branham's sign—fistula open, pulse 88; closed, 62.

Blood pressure phenomenon: Fistula open 160/70; closed 164/100.

Operation: 1. Extraperitoneal exposure of external iliac artery and vein; provisional ligation applied.

2. Vertical incision over course of the femoral vessels, with exposure of common and superficial femorals and point of anastomosis.

3. Provisional ligatures placed around femoral artery and vein below the point of the fistula.

4. All provisional ligatures were temporarily tightened and the attempt was made to separate the artery and vein. This was followed with very free bleeding and was abandoned.

5. All branches of the artery and vein were ligated before we were able to control the bleeding. The provisional ligatures were permanently tied and aneurysm was excised.

6. Closure without drainage; primary union; relief of pain.

Case 2

Arteriovenous Fistula

Right Common Femoral Artery and Vein

Mrs. Bessie S., white female, married, aged 34, 1 para; was shot in the right groin with 38 calibre bullet 9 years ago; wound of entrance just below anterior superior spine with exit on inner side of the thigh about three inches below groin.

Says leg became swollen immediately after the wound was received and the swelling has persisted. She began to be conscious of some disturbance of her heart a few weeks after she was injured.

Examination at my office August 29, 1932.

Her local subjective symptoms have been an aching pain in the groin which is experienced occasionally.

Objective signs: Thrill and widely disseminated bruit. There is no tumor and the scars are very faint. Wound of entrance in centre of groin just below Poupart's ligament. Wound of exit on same level on inner aspect of thigh.

Peripheral signs: Edema of right leg with varicose veins of moderate size. The

5. Matas, R.: Personal Communication, Dec. 7, 1932.

6. Reid, M. R.: Studies on Abnormal Arteriovenous Communications, Acquired and Congenital; Report of Series of Cases, Arch. Surg. 10: 601-638, March '25.

right calf is 15 inches in circumference, while the left is 13.5 inches.

Central: An enlarged heart, with definite aortic and mitral blows; Branham's sign 84/64; and blood pressure change 128/70—180/100.

This patient's compensation has been very good, so far, and she is unwilling to undergo operation. Eventually we may expect more peripheral as well as more constitutional disturbance.

Case 3

Arteriovenous Aneurysm

Left Femoral Artery and Vein at Mid Thigh

E. S. Z., white male, married, aged 32, Hillman Hospital, No. 79677, admitted Jan. 4, 1933, was shot in thigh 19 years ago. The wound of entrance was on the inner aspect of the middle of left thigh; exit on the outer side of the thigh at level of the upper part of the popliteal space.

There had been some swelling of the foot since shortly after the receipt of the injury. Gradually there developed varicose veins, and within the last few months an ulcer had formed following the receipt of an injury to the shin. For the past year he had suffered from dyspnea and pain in the chest.

Local symptoms: Thrill and widely transmitted bruit. No tumor, but there is definite enlargement of the artery as compared with the one on the opposite side.

Peripheral: Swelling of leg and foot; varicose veins extending well above the knee; and ulcer on the shin.

Cardiovascular: Precordial thrill; cardiac enlargement, with apex in mid-axillary line; to-and-fro murmurs at aortic and mitral valves; Branham's sign and blood pressure phenomena demonstrated; pulse 110/94; blood pressure 140/0—150/24.

Treatment: After carefully testing the efficiency of the collateral circulation, the fistula was treated by quadruple ligation and excision under novocain infiltration followed by ether.

He reacted promptly, but, unfortunately, died suddenly some hours after operation. Autopsy was not obtained but the symptoms indicated pulmonary embolus.

Examination of the specimen showed a narrow connecting channel with wide dilatation of the vein in the immediate neighborhood of the fistula.

Case 4

Arteriovenous Fistula of the Left Subclavian Vessels in the First Portion

A detailed report of this case will appear in an early number of *The American Journal of Surgery*, hence only a brief outline will be given at this time.

Francis G., colored female, aged 30, married and the mother of three children, was admitted to the Hillman Hospital on January 17, 1932, thirty minutes after being stabbed below the inner end of the left clavicle. Within 48 hours she developed the thrill and bruit characteristic of arteriovenous aneurysm and the location of the wound indicated that it was near the origin of the subclavian artery.

From previous admissions to the hospital and from examinations on the day of admission and on the following day, it was established that she had had no previous heart disturbance.

By February 9 her wounds had healed and she had recovered from the effects of shock and hemorrhage. The thrill had become greatly accentuated and the bruit was widespread.

Operation after a few weeks was contemplated and she was allowed to go home with instructions to report to the clinic at stated intervals. She reported on February 19 and was then lost sight of until March 24 when she was readmitted suffering from extreme cardiac decompensation.

Treatment: On March 28—left thoracentesis; 1,2000 cc. serosanguinous fluid withdrawn from left pleura.

First Operation

March 31. Exploration under local anesthesia, preceded by sodium amytal-morphine-atropine.

The inner two-thirds of the clavicle was resected and the subclavian, internal jugular and left innominate veins were exposed, together with the left common carotid and left subclavian arteries.

We found that without resecting the manubrium sterni and perhaps the first rib it was impossible to expose the subclavian artery at a point low enough to get below the fistula. The patient's condition was such that this was not considered advisable at this time and the operation was discontinued.

Little reaction followed and the wound healed without infection. On digitalis, purgatives, rest in bed, and sedatives, she showed slight improvement.

The left pleura was aspirated on April 8, April 21, and May 2, with withdrawal of 750, 750 and 550 cc. of serosanguinous fluid on the respective dates.

There was a steady fall in blood pressure, with a decided weakening of the pulse. The thrill and bruit persisted unabated.

On May 3 blood pressure in right arm was 100/60. The reading on the left side was very uncertain, the nearest we could estimate was 90/60. It was thought best not to defer operation any longer.

Second Operation

On May 4, the second operation was performed. This was the 77th day after receipt of the injury.

After resecting the outer half of the manubrium sterni and the inner half of the first rib, we succeeded, under local anesthesia, in ligating the subclavian artery in its first and third portions, the left innominate, internal jugular and subclavian veins, and excising sections of these vessels together with the fistula. The operation was prolonged and difficult but we were fortunate in escaping such accidents as have been reported in other attempts at ligation of the left subclavian in its first portion.

By closing the fistula, a cardiovascular degenerative process which was making the most rapid downward progress has been arrested. There has been no recurrence of the pleural effusion and all other symptoms have so much improved that the patient has been able to resume her domestic duties. Before the fistula was closed cardiac degeneration had progressed so far that she still is and will probably remain a cardiopath.

Food Allergy in Young Infants—Cow's milk is perhaps most often the offending allergen, due, of course, to its almost universal use in infant feeding. In many cases of cow's milk allergy, superheating or acidifying the milk, or using it in an evaporated or powdered form suffices, and it will be well tolerated. In many other instances it must be entirely abandoned. An excellent substitute is goat's milk, superheated, acidified, or evaporated.—*Greer, Texas State J. Med., October 1933.*

A CONSIDERATION OF SOME OF THE ANATOMIC STRUCTURES DEALT WITH IN TREATING ANORECTAL DISEASES*

By

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In order to understand the anatomy and the pathology of the anorectal region, some knowledge of its embryonic development is essential. The anal canal and the rectum are derived from two separate and distinct embryologic layers—the anal canal being derived from the ectoderm and the rectum from the entoderm.

At first there is no connection between these two structures, there being only a depression in the ectoderm corresponding to the location of the future anal canal. As time passes on, these two structures approach each other and finally become united, their canals, however, still being separated by a membrane which we call the proctodeum. Absorption of this proctodeum establishes the continuity of the two canals.

Failure of absorption results in that congenital deformity which we sometimes see known as imperforate anus. Sometimes these two structures do not approach each other properly and we have other congenital deformities. For instance, the rectum, instead of coming down to its natural location, may stop high up in the abdominal cavity, or it may attach itself to some other organ such as the uterus, the bladder, the vagina or even the urethra.

With this brief description of the embryologic development, one can easily understand that the structures composing the anal canal are growing from without inward; that the structures composing the rectum are growing from within outward. We can also understand that at the point where these two meet there will be a more or less abrupt change in nerve supply, in lymphatic distribution and in blood supply. Up to this line there is an abundant sensory nerve supply, consequently lesions here cause great pain. Above this point there is but little sensory nerve supply, consequently lesions cause but little pain. This explains the fact that a patient can be al-

*Read to the Association in annual session, Montgomery, April 20, 1933.

most dead with a cancer of the rectum and, so far as pain is concerned, be unaware of the existence of any serious anorectal affection.

Up to this anorectal line the lymphatics empty into the superficial inguinal glands; above they empty into the deep mesenteric glands. A cancer of the anus metastasizes to the inguinal glands; a cancer of the rectum to the mesenteric glands and finally the liver. The blood supply is derived from the superior, middle and inferior hemorrhoidal arteries.

The superior hemorrhoidal artery is a direct continuation of the inferior mesenteric and furnishes blood to internal hemorrhoids. The middle hemorrhoidal is distributed to the muscles and outer coats of the anus and rectum and does not enter to any great extent into the formation of hemorrhoids. The inferior hemorrhoidal is distributed to the perianal skin. Internal hemorrhoids are located above the anorectal line and are always covered with mucous membrane. So-called external hemorrhoids arise below this line and are always covered with skin.

At the upper extremity of the anal canal are the columns of Morgagni which are folds of mucous membrane caused by the convergence of the rectum to form the anal canal. Suspended between these columns are the crypts of Morgagni. The opening into these crypts or pockets is from above. On account of their position foreign bodies easily lodge within them or retained fecal matter may set up an irritation with subsequent infection which terminates in pus formation. When once infected there is little tendency toward recovery due to defective drainage. Here we have the beginning of most of the diseases which affect the lower segment of the bowel.

The pus from an infected crypt may burrow downward underneath the mucous membrane and finally rupture outside producing a superficial fistula, or it may penetrate the anal wall and gain access to the ischiorectal fossa. This space is filled with a loose fatty tissue which offers but little resistance to the further progress of the infection and very soon a large ischiorectal abscess results. These fossae communicate posteriorly beneath the anococcygeal ligament and if untreated the abscess is liable

to pass through to the fossa of the opposite side producing a bilateral ischiorectal abscess. Since all fistulae are the end result of abscesses and since abscesses are usually secondary to cryptitis the importance of the early and proper treatment of all cases of cryptitis is obvious.

ENDOCERVICITIS*

By
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In the broad field of medical endeavor there are many conditions of the human body which are considered relatively unimportant by the average practitioner; yet, if some of these conditions are followed through until they are shown to be the cause of a physical breakdown, then they become a basis for special study. Today I wish to present to you a study of a condition in the field of gynecology which is ever present and that demands the interest of every practitioner who is conscientiously trying to lessen the burden of womanhood.

The pathologic condition which we call endocervicitis or cervicitis is as old as woman herself yet is probably more neglected than any other condition of the female genital organs. Without referring to some of the tragedies of neglect, such as eye infections of the new-born, peritonitis and major operative cases, I would like to present this subject in such manner that every case which comes into your office will receive careful consideration and treatment.

It is most essential in the treatment of endocervicitis that the structure, function and physiology of the cervix and uterine body be constantly kept in mind.

Since the pathology¹ of diseases of the cervix is based so largely on the histologic peculiarities of that organ, it is necessary to hurriedly review its structure and function, particularly in relation to those of the uterine body. Embryologically, the cervix is developed from the second portion of Muller's duct, while the uterine corpus is developed from the first part, union being effected at the internal os. The cervical

*Read at a meeting of the Northwestern Division of the Association, Cullman, July 14, 1932.

1. Miller, C. Jeff: Read in Section on Obst. Gynec. & Abdom. Surg., 72nd Session, A. M. A., Dallas, April 1926.

mucous membrane is composed of complicated racemose glands which empty through small ducts into the cervical canal; their lining epithelium is of the high, cylindric, goblet-cell type, and their secretion is true mucus. In addition, the cervical mucosa is thrown into definite folds radiating from a central line, the whole constituting the so-called arbor vitae. Towards the external os, the ciliated epithelium undergoes transition into the laminated type which covers the intravaginal portion of the cervix; towards the internal os, the glands become less arborescent and the whole cylindric epithelium is lower, so that a transition is gradually effected into the corporeal endometrium, which consists of simple glands lined with cuboidal epithelium, lacking the corrugations characteristic of the endocervix, and secreting a serous instead of a true mucus discharge.

Functionally, the cervix acts merely as a passive communicating channel to the vaginal outlet, while the latter is actively engaged in the functions of menstruation and parturition. Careful laboratory studies, culminating in the work of Curtis, have proved quite definitely that the internal os acts as a barrier against practically all invading organisms except the gonococcus, so that, while infection of the endocervix is frequent, infection of the corporeal endometrium is rare and is practically never of intrinsic origin. The comparative histology and function of the two structures make these facts obvious; and it need scarcely be emphasized that the complicated structure of the cervix, particularly in the light of its frequent exposure to trauma and external infection, is an ideal medium for the growth of bacteria, or that its lymphatic system furnishes an ideal route for the upward extension of local infection.

To clearly understand its mechanism it is easier to consider the uterine musculature in its formative² rather than in its matured state. We must discard the accepted subdivisions³ of the single muscle into several layers but consider a single muscle with bundles of muscle tissue arranged in a succession of fan-shaped sprays

that wind spirally downward from each fallopian angle throughout the whole uterus to the external os. Every muscle contracts towards its fixed point, which in this instance is located at the pelvic brim through the fascicular prolongations in the round and broad ligaments. The myometrium, like all non-striated muscle, exhibits the intrinsic phenomenon of rhythmic automatic contractions. These rhythmic contractions are necessary in maintaining the nutritional and functional integrity of the uterus and to assist in drainage. Cervical secretions in normal or diseased mucosa are assisted in their outflow by these contractions. In the structural design of the cervical musculature, the fibers continuous with those of the corpus uteri do not at any point completely encircle⁴ the cervix but are disposed in compact successions of oblique circle segments, which by contraction spirally upward necessarily shorten every diameter of the uterine cavity and, by uncoiling in the cervix, widen the os, like an iris diaphragm in a microscope. Cervical dilatations thus become an integral part of uterine contractions instead of a passive relaxation in a hypothetical sphincter.

To clearly understand the derangements resulting from chronic endocervicitis, it is necessary to know the normal uterine lymphatic circulation⁵. This lymph current may be traced from its origin in the cervical and corporeal mucosa directly to the myometrium. Here it branches into an extensive capillary net, which, spreading on the perimysium, penetrates every fascicle of the entire uterine musculature of its subperitoneal surface, whence it drains into two main collecting channels that course parallel to the uterine and ovarian blood vessels at the base and top of the broad ligament. It is this normal lymphatic envelopment of the perimysial sheath and adnexae that determines the course of an infection from the cervical mucosa along the intra-muscular planes of the uterine and

4. Ivanow: Musculature de l'ute, *Annals de Gyn.*, p. 327, June '11.

5. Brown, G. V.: Chronic Endocervicitis; Its Sequelae and Treatment, *South. M. J.* 24: 122-126, Feb. '31.

Leopold, G.: Die Lymphgefasse, des Normalen Nickt Schwemgeren Uterus, *Arch. and Gyn.* vi: 1, 1874.

2. DeLee, Jos. B.: *The Principles and Practice of Obstetrics*, pp. 72-73, Philadelphia: W. B. Saunders Co. 1913.

3. Sturmdoff-Arnold: *Gynoplastic Technology*, 1923, pp. 327-352.

tubal walls to the ovarian tunica albugenia, as an ascending lymphangitis infiltrates the myometrial muscle sheaths, occasionally establishing disseminated miliary myometrial abscesses. It further progresses to the periadnexal lymphatic ramifications, inhibiting tubal peristalsis, kinking the tubes and agglutinating their fimbrial ostia by the production of bands which occasionally create tubal diverticulae having ectopic possibilities. Finally, reaching the ovaries, the lymphatic infiltrate thickens their capsular tunic, impeding the normal rupture and regression of the graafian follicles, with the ultimate development of retention cysts. Thus, we find a chronic ascending lymphangitis, with its resultant impairment of uterine, tubal and ovarian function, that links the pathology and symptomatology of chronic endocervicitis.

Every practitioner⁶ should realize that chronic endocervicitis is an essential factor in the production of pelvic inflammatory disease. Pyosalpinx, hydrosalpinx, utero-ovarian cysts and abscesses, ovarian sclerosis, uterine fibrosis, all of apparently insidious development and obscure source will usually reveal their primary focus in a chronically infected cervical mucosa.

The pathology⁷ in endocervicitis is about as variable as the number of cases examined but as we commonly picture it the cervical mucosa appears red, swollen and more or less everted, and there are circumscribed areas of glandular proliferation about the external os. The columnar epithelium of the canal may have pushed itself out in the vaginal aspect of the cervix; and it may have overgrown or completely replaced the stratified epithelium normally present, producing so-called erosion, which, as has been repeatedly pointed out, is in no sense an ulceration but merely new cell formation, resulting from the proliferation of the lymphoid tissue within the canal. Hypersecretion of the cervical glands, which results both from the prolonged vaginal contact and from the distorted structure, results in turn in hyperplasia of the cervical connective tissue. The occluded glands, which may be actually plugged by tenaci-

ous mucus as well as by the overgrowth of squamous epithelium or by hyperplasia of the periglandular tissue, and the cyst formation, which is not infrequent, add to the hypertrophy, so that the cervix may be several times its normal size. The microscopic picture varies from mild inflammatory changes in the stroma and excess of glandular tissue to marked cystic changes and even multiple abscess formation. Pelvic manifestations are more usually in the ovaries than in the tubes and parametritis is frequent, particularly in association with posterior cellulitis.

ETIOLOGY⁸

- | | |
|------------|--|
| Infancy | (a) Diarrhea and infected stools. |
| | (c) Bacteria entering vulva orifice. |
| | (c) Children bathing in water or tub with other children or adults who are infected. |
| School Age | (Insanitary toilets of circular type infected by carriers. |
| | (a) Laceration of cervix in childbirth—80%. |
| Adult Life | (b) Bacteria, such as <i>B. coli</i> , staphylococci and streptococci, entering vagina and reaching torn cervix. |
| | (c) Infected douche nozzles. |
| | (d) Gonorrhea. |

The incidence and sequence of symptoms most commonly complained of are about the same throughout the country. This is found in individual practitioners' hands as well as in clinics. A review of 6,483 women examined in the gynecology department of Cornell Medical School by Fulkerson⁹ places the incidence at 33.16%. The symptoms as listed according to chief complaint are as follows:

- (a) Leucorrhea—74.1%
- (b) Menstrual disturbances—45%
- (c) Backache—36.5%
- (d) Abdominal pain—30.4%
- (e) Urinary symptoms—28.7%
- (f) Sterility—5.8%
- (g) Fallen womb or bearing down, dragging sensation—5.3%.

6. Mathews, H. B.: A Study of Chronic Endocervicitis, Surg. Gynec. Obst. 32: 249 (March) 1921.

7. Curtis, A. H.: The Pathology and Treatment of Chronic Leucorrhea, Surg. Gynec. Obst. 37: 657 (Nov.) 1923.

8. Dallas, D. A.: Nongonorrheal Endocervicitis and Vaginitis, California & West. Med. 35: 212-216, Sept. '31.

9. Fulkerson, L. L.: Endocervicitis; Clinical Study of 1,039 Cases, Many Treated With Cautery, Am. J. Obst. & Gynec. 12: 374-385, Sept. '26.

92.3% of the women were married; 80.1% had had children or abortions.

CLASSIFICATION*

- (a) Endocervicitis in the unmarried—Usually associated with uterine displacement, backache or pelvic pain. There is usually a clear mucus discharge and little change in appearance of the external os.
- (b) Nullipara—This group has had a gonorrheal infection in the beginning, in most cases, with secondary invasion. The discharge is profuse and irritating. Cervix is frequently slightly eroded or else slightly edematous and of purplish color. There may be some involvement of structures above cervix.
- (c) Postpartum or Postabortal¹—I. Early—There is usually some type of laceration with small eroded areas and some thickness at margins of laceration, frequently accompanied by some subinvolution or uterine displacement. Mild infection.

II. Late Cases—Showing moderate amount of vaginal discharge and associated symptoms of varying degree of pelvic inflammatory disease, such as heaviness in pelvis, backache, pain in lower abdomen; the cervix is enlarged, very firm, ragged feeling and usually contains nodular nabothian follicles. There is usually a marked erosion and eversion present with a large plug of thick tenacious yellowish, muco-purulent discharge filling the cervical canal.

III. Old Cases—These have a chronic deep-seated infection of cervical mucosa, cervix very large from both edema and hypertrophy, studded with large nabothian cysts, showing multiple lacerations with extensive eversion and erosion. Profuse thick discharge filling cervical canal and vagina. These cases usually have marked relaxation of vaginal outlet from many deliveries.

TREATMENT

The treatment in every case should be directed towards the eradication of the pathology and the prevention of any complications resulting from lack of treatment. Since practically all cases of endocervicitis are ambulatory the treatment of a large

majority of cases is done in the office. The ease of exposure of the diseased part and the lack of sensitiveness in the cervix makes office treatment a comparatively simple procedure. It is rarely necessary to hospitalize even the severe cases if moderation is used in the treatment. Anesthesia is rarely necessary even in the most severe cases. I rarely use it. Cocaine solution by topical application is the anesthesia of choice in the office. General anesthesia is hardly ever resorted to in my hands.

Of all methods advocated in treating diseases of the cervix, I personally feel that anyone using silver nitrate and the actual cautery can treat 98% of all cases seen in office practice.

I have for three years been using a technique with silver nitrate, which I do not find mentioned in the literature, that has given me most satisfactory results in certain types of endocervicitis. I refer to the virgin type with mild discharge, the nullipara with secondary infection, and to the mildly infected case complicated by sterility. In a small series of cases complaining of sterility I have had 100% results with this method. I use a small stiff probe covered over the end with a thin layer of cotton. This is first wet with sterile water then dipped into fine crystals of silver nitrate so that it is completely covered with the crystals. The probe is pushed into the cervical canal as far as the internal os and withdrawn immediately. The vaginal mucosa is protected by wet pledgets of cotton. There may be some pain around the umbilicus or in the small of the back which wears off in a few minutes. The reaction in the cervix and the amount of discharge during the next few days are less than produced by the cautery.

Local applications of 10 to 20% solution of silver nitrate, mercurochrome solution of 5 to 20%, tampons of glycerine and ichthyol, or douches of antiseptic solutions are the most common local treatment. In the early postpartum cases where there is a large area of erosion without infection of the cervix, the application of crystals of silver nitrate will promote epithelization and clear up the erosion in the shortest period of time.

Cauterization is the most widely used of all present treatments in all types of cases. It offers the quickest, most complete

and effective results of any other method. I use the stripping, slitting and puncture methods as the case indicates. I have never had any severe hemorrhage at the time of cauterization or following sloughing. The small nasal tip cautery is more satisfactory because of ease of handling. Further, there is less danger of damaging too large an area of tissue.

The other types of treatment I will merely mention in order to conserve time:

(a) Destruction of cervical canal by high frequency current. This does not appeal to me and deep sloughing or severe hemorrhage may occur.

(b) Hyams' conization of the cervix—I am not familiar with this treatment. The equipment is both expensive and cumbersome.

(c) Injection of aqueous solution of mercurochrome or ethyl alcohol into the cervical tissues—This suggests a line of treatment which may be of great value. At present I do not see that it offers any better results than the cautery.

(d) Radium in cervical canal in small doses—Works very satisfactorily in selected cases.

(e) Diathermy is mentioned only to condemn it.

(f) Electro-coagulation, fulguration and desiccation—This method will give good results if the proper current is used. I find it a little cumbersome to use and it offers very little advantage over the cautery even in selected cases.

(g) Operations—The Sturmdorf operation is the only one which really removes the diseased tissue. It is the choice of all operative procedures for the removal of diseased tissue.

Curettage of cervical mucosa is a neglected procedure but does give some very satisfactory results. Strips of packing should be used following the use of the curette.

Proctologic Disorders—Anorectal gonorrhea is a quite common complication in gonorrheal female patients. The anal mucosa is first involved and by implantation in the anal crypts the organism may be retained for long periods. Abscess, fistula and, in negro patients, rectal ulceration and stricture are direct results.—*Rosser, Texas State J. Med., October 1933.*

THE THERAPEUTIC USE OF THE SEX HORMONES IN GYNECOLOGY*

By
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Back in 1896, at the Landau Clinic, in Berlin, dried ovarian tissue was for the first time fed to women suffering from menstrual disorders. Thyroid gland had been previously given patients for hypothyroidism with good results and it was through this analogy that ovarian treatment was begun. Since that time we have learned a great deal about the glands of internal secretion which regulate the female cycle, but this knowledge can still be said to be only in the adolescent stage. An enormous amount of work is being done in this field. The reports of results are often unconvincing and sometimes conflicting. My purpose is not to bring to you any new knowledge but to summarize the established facts relating to menstruation and pregnancy in woman and to take stock of how this new understanding of endocrine influence may be practically applied by the clinician.

There are still a number of minor points in regard to the control of the menstrual cycle by hormones which are by no means clear. There is considerable discussion, for example, as to the duality of the sex hormone of the anterior pituitary—some writers even claiming four different sex secretions from the hypophysis. But in spite of uncertainty on these points the general picture of what happens during the normal cycle in woman is understood.

The anterior pituitary, according to most workers, secretes two sex hormones, prolan A and prolan B. During the first part of the cycle, under the influence of the prolan A, a graafian follicle is developed in the ovary, the ovum is brought to maturity and the secretion of the follicle, which is known as theelin, is produced. On about the fourteenth day of the cycle ovulation occurs. The ruptured follicle continues to produce some theelin but the influence of prolan B of the pituitary (often called the luteinizing hormone) becomes evident and under its influence the corpus luteum is developed and its secretion, known as progesterin, is formed.

*Read at a meeting of the Northeastern Division of the Association, Talladega, July 11, 1933.

Theelin, which goes by the blood stream to the uterus, at the beginning of the cycle has built up the basal layer of the endometrium, which had previously been thrown off at the last menstrual period. Progesterin from the corpus luteum carries the endometrium on to the secretory stage, the glands become more elaborate and the uterus is prepared for the reception of the fertilized ovum. If fertilization does not occur, with the death of the egg there is degeneration of the corpus luteum, and without the support of progesterin the elaborated endometrium breaks down and bleeding or menstruation occurs.

This relation of menstruation to destruction of the corpus luteum is often observed clinically. If a corpus luteum is removed at operation, the patient menstruates in from twelve to thirty-six hours afterwards. At the clinic I have occasionally felt a small ovarian cyst rupture under my hand during bimanual examination. In all of these cases the patient has reported that menstruation began a few hours later. In amenorrhea, associated with persistent corpus luteum, in which a small cystic ovary is felt, heavy but careful bimanual palpation as a method of treatment is worth trying¹.

In order to make rational the treatment of dysfunction in woman by use of gland substitution, in addition to knowing the basic picture of the female cycle, it is necessary to know in what amounts these hormones involved appear in the circulating blood and in the urine of healthy women at different stages of the cycle, and also to know how this normal rhythmic variation is affected by such abnormal conditions as amenorrhea, menorrhagia and sterility.

Work in this field has recently been done by Frank² and by Mazer and Goldstein.³ Frank found that in normal women one mouse unit of theelin can be found in forty

cc. of blood during the week preceding menstruation. This amount of blood will not give a positive test for theelin at any other time during the cycle. The amount of theelin excreted in the urine of normal women has two peaks, one occurring at the time of ovulation and the second just before menstruation.

During pregnancy the amount of theelin in the blood falls in the first two months, due to the large amount excreted in the urine, but from that time continues to rise until parturition.

The sex hormone of the anterior pituitary cannot be obtained from the blood of normal nonpregnant women in any demonstrable amount at any time; however, during pregnancy, after castration and after the menopause, it is found⁴. This is thought to be due to the fact that the natural antagonism of the ovarian secretion to the anterior pituitary is lost in these conditions and so an excess of the pituitary secretion results.

The clinical picture in menstrual disorders gives little or no indication as to the amount of hormones which may be present in the blood or urine. In amenorrhea, for example, one of three different conditions may be found. There may be a sub-threshold cycle in which the rhythmic variation is normal but where the theelin present in the blood before menstruation is half or less than half of that which is normally found. In another type the amount of theelin excreted in the urine may be normal but none will be found in the blood. In a third group there may be an absence of theelin from both blood and urine. Since the clinical picture does not indicate the amount of hormones present, it is important, especially in the more serious cases, to determine this before treatment is begun. At the present time, for a physician who does not have a good laboratory available, there are some difficulties in making these determinations. But as the technique for the tests is perfected they should become as simple and practical as the Friedman test for pregnancy now is.

Although these fundamental discoveries in endocrinology are of recent date, for the past thirty years millions of tablets of ova-

1. Anspach, B. M., and Hoffman, J.: Foundation of Endocrine Clinic for Study and Treatment of Amenorrhea, Uterine Bleeding, and Sterility, *Am. J. Obst. & Gynec.* 24: 3-12, July '32.

2. Frank, Robert T.: *The Female Sex Hormone*, Springfield, Ill., Chas. C. Thomas, 1929.

Frank, Robert T.: Role of Female Sex Hormone, *J. A. M. A.* 97: 1852-1857 (Dec. 19) 1931.

3. Mazer and Goldstein: *Clinical Endocrinology of the Female*, Philadelphia and London, W. B. Saunders Company, 1932.

4. Fluhmann, C. F.: Significance of Anterior Pituitary Hormone in Blood of Gynecologic Patients, *Am. J. Obst. & Gynec.* 20: 1-15, July '30.

rian substance and corpus luteum have been poured into hopeful womankind. It is probably just as well that these preparations were largely, or entirely, inert. Now we have active commercial preparations of the follicular fluid and of the anterior pituitary secretion. Progestin, the active principle of corpus luteum, has been isolated but due to its instability is not yet available commercially. Even with these preparations at hand, to a person who has made even a superficial study of this field of therapy, it is evident that at the present time scientific use of these extracts, except in a few conditions, is still impossible. There is much yet to be learned about the sensitivity of tissues to endocrine substances, the rates of excretion and the delicate balance, which in health exists between these different hormones. Until we know more, the therapeutic use of these agents must be of a hit or miss nature; it is no wonder that the results in the past have often been disappointing. In speaking of theelin, R. T. Frank, who has had wide experience in the use of this preparation, says, "I must confess that after faithfully and continuously working with theelin for twenty-five years, I am forced to acknowledge that this drug has given no therapeutic results." In the face of a statement of this kind, the profession receives almost daily advertisements from commercial houses in which sex glands are held up as a sure cure for all the ills the human female is heir to. It seems to be a case of "fools rushing in".

In speaking of the older oral preparations which are now considered largely inert, it is only fair to say that many excellent clinicians, including the late Dr. Graves, are convinced that in the vasomotor disturbances of the menopause these drugs were of real value in controlling symptoms. Dr. Novak, in commenting on this belief, thinks the results obtained were probably due to psychic influence, but since these results were as good as any that we get today he claims that we have no grounds for objections.

The two preparations which we have available at this time are the follicular extract called theelin and the sex hormone from the anterior pituitary, both of which are obtained from the urine of pregnancy. So far, the latter preparation seems to

promise more in the way of therapeutic usefulness. The use of this anterior pituitary preparation in the bleeding of puberty and later indicates a high percentage of successful treatment^{5, 1}. This is one of the few conditions in which it is universally agreed that gland treatment is of definite value. In this condition we have the satisfaction of being able to correlate the observed facts with what we know of the endocrine factors involved. A young girl begins to have irregular and too frequent periods with excessive flow. Symptoms become more aggravating until bleeding may become almost continuous. If a curettage is done the endometrium obtained is found to be in the interval stage. If laparotomy is performed, numerous graafian follicles near maturity will be found in the ovary but there will be an absence of the corpus luteum. For some reason the anterior pituitary which stimulates the follicles to luteinization is not functioning properly. The persistence of the follicles leads to an excess of theelin in the blood. (This can be demonstrated by Frank's biochemical test). This excess theelin stimulates the endometrium of the uterus to hyperplasia and the typical Swiss cheese picture with hypertrophied glands is found. Bleeding is thought to occur as the result of small areas of necrosis in the over-built up endometrium. By giving intra-muscularly the luteinizing hormone the persistent follicles are carried over into the corpus luteum stage, production of theelin is cut down, bleeding stops and menstruation becomes normal. The results of this treatment are not one hundred per cent but in carefully selected cases where anatomical causes of bleeding, such as submucous fibroid, carcinoma, or polyp, are ruled out, the results are most gratifying. Dr. Novak, who did the first work with this group, uses two cc. of antuitrin-S daily from three to five days, after which time bleeding has usually ceased.

Anterior pituitary extract is being used in the treatment of primary dysmenorrhea^{6, 7}. Reynolds has recently shown that

5. Novak, E., and Hurd, G. B.: Use of Anterior Pituitary Luteinizing Substance in Treatment of Functional Uterine Bleeding, *Am. J. Obst. & Gynec.* 22: 501-512, Oct. '31.

6. Novak, E.: Treatment of Primary Dysmenorrhea, With Especial Reference to Organotherapy, *Am. J. M. Sc.* 185: 237-243, Feb. '33.

theelin has a stimulating effect upon uterine contraction, while secretion of the anterior pituitary and of the corpus luteum has the opposite effect. As it has long been believed that pain of primary dysmenorrhea is caused by uterine contractions, this work has important bearing on the treatment of this condition. The pain in dysmenorrhea often begins from a few hours to a day or more before the onset of menstruation. It is at this time that the corpus luteum is degenerating and that the greatest concentration of theelin is found in the blood. It would seem that the withdrawal of progestin, which inhibits uterine contraction, is enough in some patients to produce pain. In other women there may be an actual disproportion between theelin and progestin which causes increased and abnormal contraction, resulting in pain. As progestin is not available commercially, anterior pituitary extract has been used with good results in cases of dysmenorrhea. One cc. of antuitrin-S is injected one to two days before menstruation and the dose repeated in one to two days, depending on the duration and severity of the pain. This acts merely as an antispasmodic and while it is no doubt physiologically more ideal than the use of any other relaxant, the results are no better. Atropine, gr. 1/100, given three times a day to the point of saturation for from one to two days before the onset of menstruation is as effective. With the use of either, the usual measures of rest, hot applications and if necessary, analgesics, should be given.

In looking toward the permanent relief of this condition, Novak believes that the presence of hypoplasia, which is often associated, is an indication for the use of theelin. He gives fifty R. U. of theelin on alternate days for six days, beginning just after menstruation. This is repeated during the follicular phase of each cycle until results are obtained.

The value of theelin at the time of menopause or after castration is more or less problematic. It is rather generally agreed that the injections are useful in controlling the hot flushes and the nervous symptoms. Werner and Collier⁸ found that with large

doses (four to eight cc. daily for three months) in a small series of cases, subjective symptoms were relieved. Geist and Spielman⁹ out of forty-two cases treated, had only eleven in which there was any considerable improvement. These workers believe the psychic element is an important factor in the improvement. Other men using general means of treatment have obtained as good results as those obtained with organotherapy.

The use of theelin in amenorrhea is of no value unless supplemented with the secretion from the anterior pituitary. It is true that in some women large doses of theelin will produce bleeding but this bleeding has not been preceded by ovulation, and it comes from a uterus with endometrium in the interval stage. Except to relieve an overanxious patient, it is hard to see how this abnormal flow is of any value. When injections of theelin during the first half of the cycle are followed by anterior pituitary hormone injections, a certain number of women with amenorrhea will menstruate. However, this is merely substitution therapy and must be repeated each month. Most women are not enthusiastic at the prospect of frequent hypodermic injections and the high cost of the drug, especially when they learn that the amenorrhea in itself is harmless¹⁰.

Organotherapy in functional sterility has been disappointing. In a series of sixty cases treated by Mazer¹¹ there were nine deliveries, but the role of the glands is hard to estimate since other therapy, such as removal of foci of infection, correction of diet and general hygienic measures, was simultaneously employed.

There remain a number of fascinating possibilities in which gland treatment may some day be useful. The treatment of habitual abortion, induction of premature la-

7. Novak, Emil and Reynolds, S. R. M.: Cause of Primary Dysmenorrhea, with Special Reference to Hormonal Factors, *J. A. M. A.* 99: 1466-1472, Oct. 29, '32.

8. Werner, A. A., and Collier, W. D.: Effect of Theelin Injections on Castrated Woman, With Histologic Report, *J. A. M. A.* 100: 633-640, March 4, '33.

9. Geist, S. H., and Spielman, F.: Therapeutic Value of Amniotin in Menopause, *Am. J. Obst. & Gynec.* 23: 697-701, May '32.

10. Marshall, F. H. A.: Recent Research on Sex Hormones and Their Cyclical Production, *Brit. M. J.* 2: 232-234, Aug. 6, '32.

11. Mazer, C., and Andrussier, I.: Incidence, Diagnosis and Treatment of Functional Sterility, *Am. J. Obst. & Gynec.* 22: 46-59, July '31.

bor, prevention of conception in women who should not have children, stimulation of the reticulo-endothelial system in pelvic inflammatory disease¹², treatment of the cyclic occurrence of ulcers of the mouth and vulva, treatment of menstrual headaches; all of these may some day yield to correctly employed organotherapy.

But this will not come until our knowledge is established more firmly on an experimental and laboratory basis with carefully controlled clinical confirmation. With our present information, the indiscriminate use of these active principles will only be a shot in the dark, and may prove at times to be a dangerous shot.

Recent work of Kunde¹³ has shown that the daily injection of theelin into immature dogs causes sclerosis and marked decrease in size of the ovaries, enlargement of the posterior pituitary, decrease in size of the anterior pituitary and marked hyperplasia of the thyroid gland. Evidence of bad effect of clinical administration of theelin is not conclusive, but this possibility should be kept in mind, particularly if the larger doses recently advocated should become generally used.

The future for endocrine therapy in the sexual sphere seems bright. However, this new knowledge is still in a more or less nebulous state. There has been a tendency for clinicians to go ahead of those in the experimental laboratory, and in some cases to use these agents indiscriminately. This is to be regretted, not only because it brings organotherapy into disrepute, but because, with the active principles which we now possess, there seems to be an element of danger to the patient in such a policy.

FURTHER REFERENCES

1. Ford, F. A., and Mueller, S. C.: Study of Estrus-Producing Hormone in Circulating Blood of Normal Women, *Am. J. Obst. & Gynec.* 24: 329-333, Sept. '32.

2. Graves, W. P.: Some Observations on Etiology of Dysfunctional Uterine Bleeding, *Am. J. Obst. & Gynec.* 20: 500-518, Oct. '30.

12. Fluhmann, C. F.: Incidence of Sex Hormones on Reticulo-endothelial Cells of Uterus and Possible Application to Treatment of Pelvic Inflammatory Conditions, *Am. J. Obst. & Gynec.* 24: 654-667, Nov. '32.

13. *Proc. Soc. Exper. Biol. & Med.* 28: 122 (Nov.) 1930.

3. Kurzrok, R., and Ratner, S.: Relation of Amenorrhea Accompanied by Genital Hypoplasia to Follicular Hormone in Urine, *Am. J. Obst. & Gynec.* 23: 689-694, May '32.

4. Rowe, A. W.: Endocrine Studies; Endocrine Influence in Sterility, *J. A. M. A.* 95: 1219-1221, Oct. 25, '30.

5. Novak, E.: Functional Disorders of Menstruation, With Remarks on Organotherapy, *J. A. M. A.*, 95: 1221-1227, Oct. 25, '30.

THE SCOPE OF DERMATOLOGY*

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For a clearer understanding between the specialties, and specifically for a better knowledge on the part of the general practitioner as to how and when the dermatologist may be of assistance to him, it will be the purpose of this paper to outline very briefly something of what dermatology of today properly embraces.

One prominent clinician says that when he received his medical training skin diseases were classified as (1) those diseases that were amenable to sulphur, and (2) those diseases that were not amenable to sulphur. A distinguished surgeon once said to me that he could not handle skin diseases because the treatment to him is internal, external and eternal. It is the impression of some that the dermatologist can diagnose a lesion, give it a long name as a result of inspection only, and that the only therapeutic requirement is a prescription. The fact is that the dermatologist equipped only with the pot of ointment and the bottle of lotion has passed from the stage of action. I submit to you that dermatology is one of the most exact and precise branches of medical science.

Cutaneous medicine is rapidly finding its justification. Clinical and laboratory research by dermatologists and by pure scientists working along dermatologic lines has not only revolutionized dermatology as a specialty but has been of considerable benefit to the general field of medicine. Cutaneous medicine is inseparably connected with general medicine, the skin, of course, being an organ that is an integral part of the body as a whole. Engman has

*Read to the Association in annual session, Montgomery, April 18, 1933.

said that the skin is the mirror of the body. There is almost constantly a reflection in the skin of disorders in the other organs of the body, so no matter what your field may be your work has its cutaneous aspects.

The trained dermatologist is necessarily well grounded in general medicine and surgery and must at least have some training in ordinary laboratory procedure. Without a working knowledge of this a correct diagnosis and proper treatment would be out of the question.

Dermatology properly includes all those systematic conditions which present cutaneous manifestations, as well as all local skin diseases. To differentiate the conditions that have an internal etiology from those of purely external origin, and from those of both internal and external causation, you can find no better consultant or get more efficient assistance than from the dermatologist. He by nature, or at least as a result of persistent training, is a very close observer of detail or minutiae and is best able to tell when to be an internist or whether to be an externist.

Allergic manifestations—urticaria, erythema multiforme, angioneuro-edema, toxic rashes, etc.,—are probably more often identified by the skin manifestations, properly classified; and clinical cures are more often secured by the dermatologist than by the internist himself. Focal infections with cutaneous manifestations are commonly located and the patient sent back to the referring physician for proper surgical procedure. Purpuras are but skin manifestations of pathologic changes of systematic nature. Endocrine dysfunctions are almost constantly associated with dermatologic markings. These skin changes are sometimes the first symptoms of glandular involvement.

Too much emphasis cannot be placed on the importance of early recognition of pre-cancerous and cancerous lesions of the skin and orificial mucous membranes. These lesions have always been more or less a puzzle to the majority of surgeons and internists, especially in their incipiency; yet, they can usually be properly classified by the trained dermatologist by inspection and palpation. Early and thorough treatment of these lesions will militate against unhappy endings in the experience of us all.

Syphilis, the great imitator, presents on the skin a protean morphology and often deceives the trained clinical eye and comes to the dermatologist for diagnosis. There is quite generally prevalent a tendency to give large initial doses of arsenicals, repeated at short intervals, with often very little or no investigation as to the general condition of the patient after getting a positive Wassermann. We find this situation often when called in to see a generalized exfoliative dermatitis produced by arsenic. Whether or not this is a hangover from the War I do not have the authority to say.

A great American dermatologist has said there is no longer any reasonable excuse for the incidence of arsenical dermatitis if the attending physician is a trained dermatologist. This particular man insists on a complete physical examination before instituting specific treatment; that the doses of arsenicals be very small to begin with and gradually and carefully increased; that an examination be made before each dose of salvarsan when in doubt as to the integrity of the cardiovascular or renal systems, or as to the existence of hepatic involvement; and that we treat the patient and not fight the positive Wassermann. His assertion, I am sure, is based on the fact that he insists on this painstaking care in each individual case.

It is attention to these details, so thoroughly instilled into the dermatologist, that makes him a safe man to entrust with the care of the syphilitic patient, and may in some measure be responsible for the drift toward the dermatologic service in the clinics. In the great clinics in our large cities syphilis has been placed on the dermatologic service for treatment in a great many instances. As to the wisdom of this complete surrender of these cases I am not thoroughly convinced, although statistics indicate that the treatment is accurately and carefully given and the results are gratifying. The thoroughness of the dermatologic treatment, together with the long and systematic follow-up routinely adopted in these cases, even after negative serum findings, will, it is believed, result in a lessened incidence of neuro-syphilis in the years to come.

While the dermatologist is best able to diagnose the skin lesions of syphilis, it must

be conceded he is less able to evaluate the manifestations of the disease in the other organs. Therefore, in my opinion, the dermatologist should treat the skin manifestations of syphilis. The internist on the other hand has superior judgment of this disease in the internal organs and is better qualified to handle this phase of the disease than is the dermatologist. Surely the neurologist should by nature and training be better qualified to treat neuro-syphilis than any other man in the medical profession.

Varicose ulcers have been about abandoned by the surgical service and placed on the dermatologic service for treatment in the large clinics. The dermatologic treatment renders most of these cases ambulatory during the process of healing; and since the advent of gelatin casts and sclerosing solutions for intravenous use, the percentage of cures is very gratifying.

Acne, herpes zoster, psoriasis, lichen planus, leukoplakia, senile and seborrheic keratoses, the eczemas, verruca and nevi—to mention a few—are conditions that you will agree with me are more expertly handled by the dermatologist. Experience and observation would lead me to add to this list erysipelas, boils and carbuncles. Without question these conditions have a shorter duration when in the hands of a competent dermatologist. Birkhaug's serum for chronic recurrent erysipelas—not now commercially available—is a real contribution to dermatology.

The general men too often fail to avail themselves of the benefits to be derived from the use of non-specific foreign protein therapy in pyogenic skin conditions and are prone to apply on the skin very strong and irritating medicaments in acutely inflamed conditions, sometimes producing a dermatitis venenata with the remedies used.

To the untrained eye all skin eruptions bear a marked similarity, yet a careful check of the minutiae sharply differentiate them. Who but the dermatologist can readily differentiate a papular eczema from the papule of lichen planus? Who else can so often definitely diagnose a dermatitis venenata and differentiate it from a vesicular eczema, or a bullous urticaria from a pemphigus or a bullous impetigo? So it is all the way through the field of cutaneous medicine.

Excellent men have sent us cases of sporotrichosis, for example, with diagnoses ranging from impetigo to syphilis, tuberculosis and cancer. Molluscum is often mistaken for epithelioma. This is by no means a reflection on the ability of my good friend the general practitioner but serves to re-emphasize the difficulty with which skin lesions are recognized and properly classified, and the growing usefulness of the trained dermatologic eye to the general field of medicine.

To those of you who treat warts and moles let me sound this note of caution. Beware of pigmented neoplasms. Be sure the pigment is not melanin. I could recite tragic cases of melanosarcoma following the removal of a small blue mole or wart. If and when we remove pigmented nevi, we use the so-called radio knife and remove a piece of normal tissue which contains the unmolested nevus in its entirety. If this cannot be accomplished with a certainty, we do not treat them at all. Warts are probably best removed with the desiccating needle and curette. Simple unpigmented moles should be lightly desiccated and curetted. Senile and seborrheic keratoses should be removed to prevent a possible malignant degeneration. This is usually accomplished with carbon dioxide snow. If this is insufficient we always have access to the desiccating needle and, if need be, the x-ray.

Epitheliomas on the skin should be thoroughly destroyed with the desiccating needle and curette. Larger growths sometimes require the coagulating current or even the cutting current. After thorough removal, properly administered x-radiation is good practice. When the cases are seen early enough, a cure can be safely prognosticated. Any lymphatic involvement should be properly dealt with by the surgeon in addition to the above outlined measures. These involvements of course very materially change the prognosis, although many cases recover. Thorough treatment extending over a long period of time is absolutely essential.

Leukoplakias respond satisfactorily to refrigeration or desiccation and curettage, with of course attention to oral hygiene and to any systemic condition that may be present as an underlying cause.

Acne, lichen planus, certain types of tinea, some types of local and generalized pruritus, most of the eczemas, certain stages of psoriasis, etc., respond to x-ray treatment and to other local and internal treatments.

X-ray is potent. McKee has said it is the greatest single therapeutic agent in the hands of the dermatologist. To be beneficial in skin diseases this agent must be handled with great care and skill. Accuracy in focusing, dosage, and interval are most important. Knowledge as to the disease to be treated, the indications for x-ray, a knowledge of the changes it will produce in the skin, the ability to detect the slightest x-ray reaction, are matters of judgment that come to one only after long training and experience. It is a mistake to send your cases of skin diseases to a technician in an x-ray laboratory for treatments. One without knowledge of skin diseases, without knowledge of x-ray skin therapy, and often without medical training cannot possess the prime requisite—judgment. As a result of this kind of treatment, a very valuable therapeutic aid is brought into disrepute. The patient pays, and ultimately we pay. In our office we would never do radiography, nor would we attempt deep therapy. Our line is superficial therapy and we know nothing about x-ray laboratory work.

Ultraviolet is a potent agent in medicine. Its use in dermatology is rather circumscribed—sales talks to the contrary notwithstanding. It is practically a specific in pityriasis rosea, and is of some value in other dermatologic conditions.

The "Simon Pure" dermatologist is of great assistance to the physician and surgeon and to the specialist in every line in properly differentiating the cutaneous conditions we endlessly encounter in the practice of medicine, but he is never their competitor. Of course, the purely dermatologic conditions are sent to us for diagnosis and treatment, but we constantly act as a clearing house for the many and varied systemic conditions with skin symptoms but which are not taken out of the hands of the referring physician.

I have no desire to appropriate ruthlessly to myself and to my specialty the entire field of cutaneous medicine. This is not my plea. We have no panacea and we must

confess that specifics are few. Dermatology is a difficult branch, even for the man with special training. To the untrained eye it is practically impossible.

I trust that this paper will shed a little light on some of our problems as fellow physicians and will aid the profession to realize that the dermatologist is the competitor of none but the friendly consultant of all.

A CASE OF ACTINOMYCOSIS OF THE LUNG AND CHEST WALL*

By
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And
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J. M., Case No. 70294, age 51 years, a coal miner by occupation and a native of this State, was admitted to the Employees' Hospital December 7, 1931 and died on January 21, 1932. He was not acutely ill on admission but stated he had been suffering from a cough for one year and had been confined to bed since the month of July. This cough had been productive and recently—before his admission—there had been some hemoptysis, with pains in his chest which were believed to be due to pleurisy. The patient had gradually declined in health and had not been able to work for the past five months. There had been some gastro-intestinal upset in July but none recently. No history of edema, palpitation or tachycardia, but moderate dyspnea with marked asthenia. There was nothing in the previous history which would cast any light upon the existing condition.

Examination on admission showed an emaciated, prematurely aged Negro. Anemia was evident in the palms of his hands and in the visible mucous membranes. Abdomen was tympanitic but no mass could be made out. There was no abdominal tenderness or rigidity. His inguinal glands were enlarged and both epitrochlears were palpable. Knee jerks were active. Pupils were equal and responded to light. Elbow jerks equal. The Romberg was negative. Blood pressure was 100/60. Double curvature was very marked in all of his nails. Temperature on admission was normal.

*From the Medical Section of the Employees' Hospital, Fairfield.

Heart dullness was enlarged and a two-and-a-half friction rub was heard at the apex. The right chest appeared to be normal. In the left upper thoracic cage an area of dullness was made out on both anterior and posterior surfaces, which evidently was caused by consolidation of the lung in this area. On the posterior surface of the left upper chest there was marked tenderness even on very light percussion, and over the entire left upper chest an edema of the chest wall was very noticeable. We had no explanation for this edema at the time.

On account of his age, race, and the left-sided location of the lesion, an aneurysm with resulting atelectasis was suspected, but no physical evidence of aneurysm could be found.

Nose and throat examination done the day after admission was negative. General physical examination done the day of his admission failed to reveal very much, except the chest findings which have been already noted.

Urinary findings during his stay in the hospital showed some occasional casts and some trace of albumin. Three hemoglobin estimations averaged about 50%. R. B. C. counts: 3,500,000, 2,925,000, 3,400,000, and 3,500,000. W. B. C. counts: 21,250, 21,500, 25,000, and 31,000. Wassermann was negative. Stools failed to reveal anything.

Immediately after admission a series of sputum examinations (eight in number) was made for tubercle bacilli and none found. The sputum was cultured, and a budding fungus—in all probability a monilia—was grown from three specimens.

Blood chemistry showed blood sugar 60 mgs., N. P. N. 27 mgs., and creatinin 1.5 mgs.

The patient pursued an uneventful course, gradually growing weaker, and on January 21 he made his exitus.

We believed after the x-ray plates were made that we were dealing with some unusual type of fungus infection and we strongly suspected we were seeing here our first case of coccidioidal granuloma. The destruction of the bony cage in the upper left thorax exceeded that of any other adult case which we had witnessed since this hospital was opened.

First X-Ray Report, 12-8-31: "There is a large dense opacity in the upper half of

the left chest. The first and second ribs are almost entirely destroyed, only the distal and proximal portions remaining. There is a partial destruction of the mid portion of the third rib. There appears to be a pathologic fracture of the third rib about 4 cm. from vertebral articulation. The process involving the ribs seems to be entirely destructive; no evidence of new bone formation can be seen. The appearance suggests extensive malignancy involving both lung and chest cage, or fungus infection."

Second X-Ray Report, 12-14-31: "The left shoulder is markedly elevated. There is extensive osteoporosis of scapula and humerus. The process involving the ribs has definitely advanced in the last week. There is now a large area of destruction in the mid portion of the third rib. Trachea is displaced to the right. The area of density in the left upper has increased and left base is much more opaque."

Third X-Ray Report, 1-5-32: "The process continues to advance. The first and second ribs have almost entirely disappeared. The area of destruction in the mid portion of the third rib now involves about 5 cm. of the rib."

Postmortem was obtained. Autopsy was performed by Dr. Walter C. Jones, and the findings were as follows:

I—GROSS

Cranial Cavity: Not allowed to open.

Thoracic Cavity: Heart was somewhat small and flabby and slightly dark in color. Coronaries normal. Aorta revealed a few small, yellow, slightly elevated spots and streaks on its inner surface. Pericardial cavity contained about two ounces of thin, clear, straw-colored fluid.

Lungs: Right lung was normal. Left lung was almost completely solidified and very adherent to all of its surroundings. The apex was most involved, and the lesion of the organ had burrowed up into the base of the neck on the left side so that when the pathologic tissue was dug out a cavity the size of a man's fist was produced. The lung was grayish, whitish and yellowish in color. It was rather solid, yet it cut easily and was rather friable. Certain regions, from 2 to 5 cm. in diameter, were much softer than the rest of the organ; and these softer por-

tions escaped more or less when incised, leaving indefinite irregular cavities. The appearance of the lung did not suggest either malignancy or tuberculosis. The mediastinal lymph nodes were very much enlarged and blackish in color.

Abdominal Cavity: Stomach, intestines, pancreas, liver and spleen were all approximately normal.

Kidneys were smaller than normal and firm in consistency. Capsules stripped with some difficulty. External surface was red and gray mottled in color. Gross section revealed normal markings much obscured and there were many whitish streaks perpendicular to the surface of the organ; they were located near the surface. The rest of the urinary organs and the reproductive organs were normal.

II—MICROSCOPIC

Lungs and the adjacent structures invaded revealed much proliferation of connective tissue, as shown by the presence of innumerable epithelioid cells. Lymphocytic infiltration was abundant. Fatty degeneration was especially marked. In these involved tissues, especially in the lungs, were many ray-like structures, arranged with the peripheral rods perpendicular to the surface and the distal ends were clubbed. Internally, the arrangement was irregular. These did not dissolve with heat or with ether. Fat globules were present in great numbers and varying sizes. Structures suspected to be yeast always turned out to be fat globules when studied carefully, especially with stains for fat.

Heart muscle showed some deposit of brown pigment distributed longitudinally at the ends of the nuclei.

Kidneys revealed much increase of connective tissue in which there was much lymphocytic infiltration. Tubules were badly broken down. Glomeruli showed considerable hyalin degeneration of the capillaries and thickening of the capsules. Intima of the arteries was somewhat thickened.

All other organs of the body were normal.

Diagnosis: 1. Actinomycosis of the left lung, pleura, first and second ribs, and deep structures of the neck on the left side.

2. Moderate brown atrophy of the heart.

3. Marked chronic, interstitial, tubular, and capillary and capsular glomerular

nephritis, with moderate endarteritis proliferans.

COMMENT

Several compilations of actinomycosis occurrence in the United States have been made in recent years. Sanford¹ calls attention to its unequal distribution throughout the country, Massachusetts having reported seventy-one cases up to the time his paper was published. Other states, such as Alabama and Georgia have reported only one each. One hundred and sixty-one of Sanford's cases came from the Mayo Clinic. He states that Murphy of Chicago reported the first case of actinomycosis in the United States. Fifty cases have been reported from Illinois.

Sanford's second contribution, in collaboration with Voelker,² reports that 80% of their cases were males. Thoracic involvement was found in 14%, the chest wall and lungs being the chief locations. In four cases the ribs and vertebrae were infected.

Goode³ in 1931, reviewing sixty-two cases of abdominal actinomycosis, states that 77% of these originated in the appendix; and found that secondary to the primary intra-abdominal infections the two parts of the body most frequently involved were as follows: lungs fifteen cases, liver eleven cases, right kidney eight cases.

Jones and Alden⁴ in 1930 reported six cases found in Georgia. Only one case had previously been reported in this State. They feel that it is difficult to cultivate the fungus that causes the disease and more difficult to classify it after it has been cultivated.

Kirklin and Hefke⁵ discuss the roentgenologic aspect of actinomycosis of the lungs and state that perforation of the wall of the thorax occurs (Continued on page 182)

1. Sanford, Arthur H.: Distribution of Actinomycosis in the United States, J. A. M. A. 81: (August 25) 1923.

2. Sanford, Arthur H., and Voelker, Minna: Actinomycosis in the United States, Arch, Surg. 11: 809-841 (December) 1925.

3. Goode, Louis P.: Actinomycosis of the Abdomen, Arch. Surg. 22: 307-313 (February) 1931.

4. Jones, Jack W., and Alden, Herbert S.: Actinomycosis (Mycetoma); Report of Six Cases in Georgia, South. M. J., October 1930.

5. Kirklin, B. R., and Hefke, Hans W.: The Roentgenologic Aspects of Actinomycosis of the Lungs, Am. J. Surg., July 1931.

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BICHLORIDE POISONING

The number of cases of bichloride poisoning, whether of suicidal, accidental, or homicidal origin, with which physicians must deal shows no sign of lessening. And, since there is no specific antidote for this particular intoxication, this subject continues to be of perennial interest to the profession. The number of drugs and many methods of treatment which have been suggested range from simple gastric lavage and the oral administration of alkalies and milk, on through the intravenous injection of sodium thiosulphate and thioacetate, to such formidable therapeutic measures as renal decapsulation and cecostomy with subsequent colonic lavage. Anderson in 1915¹ and, more recently, Berger, Applebaum and Young² advocated cecostomy and colonic lavage to relieve or prevent gangrenous colitis and Sanford³ suggested renal decapsulation as a means of combating the nephritis that so quickly follows the ingestion of bichloride. These most

radical measures have accomplished so little good and are so impossible of application to the larger part of our population that they may be dismissed as not worthy of practical consideration. "Experimental data (Goldblatt) are on hand to show that milk, when given orally with a lethal dose of bichloride to animals, does not in any way reduce fatalities or influence the symptoms or complications of the toxemia when the emesis interval is more than thirteen minutes. The same is true of calcium sulphide, although Wilms believed that it was the chemical antidote for bichloride."⁴

The intravenous administration of sodium thiosulphate, which many physicians hopefully continue to inject, has been under fire for several years. Melville and Bruger⁵ found that it failed to prolong the life of dogs receiving a fatal dose of bichloride. Young and Taylor⁶ go even further and show that the fatalities were greater among the treated animals than among those untreated. And Mintz⁴ says of sodium thiosulphate "that this drug is useless has been definitely proved" and that there is no evidence that it converts mercury into an insoluble and inactive sulphide.

Mintz⁴, in a recent contribution, reviews the literature on the treatment of acute bichloride poisoning and presents his own series of twenty-one cases with eight deaths. He concludes that present day therapy is unsatisfactory and also says "from the literature one may conclude that calcium sulphide, sodium thioacetate and thiosulphate, milk, intravenous saline, diuresis, alkalies, cecostomy and decapsulation are of no avail. Gastric lavage, too, would only be helpful if the patients were seen 10 to 13 minutes after ingestion of the drug, for it has been shown experimentally that it takes 10 minutes for a tablet to be absorbed from the stomach. Repeated venesections and transfusions. . .may be of some help." He also urges that "attention should be di-

1. Anderson, J. H.: Successful Treatment of a Bichloride Poisoning Case by Hydraulic Irrigation Through Caecostomy Operation, Surg. Gynec. Obst. 20: 350, 1915.

2. Berger, S. S., et al.: Immediate Cecostomy and Constant Lavage in Mercuric Chloride Poisoning, J. A. M. A. 98: 700 (February 27) 1932.

3. Sanford, H. L.: Decapsulation of the Kidneys in Bichloride Poisoning, with Report of Two Cases, Tr. Am. A. Genito-Urin. Surg. 22: 65, 1929.

4. Mintz, E. Ross: Some Remarks on the Treatment of Bichloride Poisoning, with a Presentation of Twenty-one Cases, New Eng. J. Med. 208: 23 (June 8) 1933.

5. Melville, K. I., and Bruger, M.: Concerning the Alleged Antidotal Action of Sodium Thiosulphate in Mercuric Chloride Poisoning, J. Pharmacol. & Exper. Therap., 35: (Sept.) 1929.

6. Young, A. G., and Taylor, F. H. L.: The Effect of Sodium Thiosulphate on Mercury Poisoning, J. Pharmacol. & Exper. Therap. 42: 185, 1931.

rected to treating the effect of poison in each individual case rather than following a fixed formula in all cases. . . Infusion of 10 per cent glucose and saline in cases with marked vomiting and diarrhea is recommended." He also makes the interesting suggestion that bichloride tablets, if possible, be covered with some emetic so that the poison would be vomited before it could be absorbed; and he offers copper sulphate as being probably the best emetic.

W. W.

MEDICAL LICENSURE IN ALABAMA

The average busy practitioner seldom pauses to ponder the grave responsibility resting on the entire profession in matters pertaining not only to the public health of this State but also to the equally important responsibility of medical licensure.

In 1875, by an Act of the General Assembly, the public health of the State was entrusted to the care of organised medicine; in 1877, likewise by an Act of the General Assembly, our Association was made the instrument for regulating, enforcing and controlling the Medical Practice Act. In the earlier, more formative years of our existence, the function of medical licensure was participated in both by the State Board of Censors and by the Boards of Censors of the various counties. Since 1907, when it no longer seemed necessary nor desirable that county boards should continue to serve in this capacity, the responsibility for medical licensure has been the exclusive duty of the State Board of Censors. While the issuance of certificates of qualification to practise medicine, as well as the revocation of such certificates for due and sufficient cause as prescribed by law, is the sole responsibility of the State Board of Censors, sitting as a Board of Medical Examiners, the enforcement of the Medical Practice Act in dealing with illegal practitioners is largely the responsibility of the organised profession within each county. The law specifically provides that all certificates shall be registered with the Probate Judge within ten days after a physician locates in a county. Proceedings against an illegal may be instituted by any citizen or by any member of the medical profession and may be in the form of:

- (a) Warrant of arrest from a court of competent jurisdiction;
- (b) Indictment by a grand jury;
- (c) The institution of quo warranto proceedings.

Violators of the Medical Practice Act—more particularly those of the chiropractic persuasion—are continuously insinuating themselves into the more densely populated centres in open violation of the law which provides that any one who assays to treat diseases of human beings by any method or system of treatment shall be in possession of a registered certificate of qualification. Whenever a "new comer" arrives in any community the organised profession of that county, through its Secretary or its Board of Censors, should satisfy itself that this section of the law, as pertains to the registration of the certificate of qualification, has been complied with. If any doubt exists as to the legal status of any individual, confirmatory evidence should be sought from the Secretary of the State Board of Medical Examiners. Should it be ascertained that no certificate of qualification has ever been issued to the party in question, prompt steps should be taken by the society to deal with the situation in one of the three legal ways suggested above. It is not well to permit a violator to become socially and otherwise entrenched in a community before instituting proceedings; for, as time advances, the uprooting process becomes increasingly more complicated and difficult.

The fraudulent practices resorted to by impostors to gain the necessary legal recognition for plying their trade may be many, and sometimes reflect a degree of moral obliquity both brazen and astounding. For example: The filching of the certificate from one who has been duly licensed; the erasure of the name and the substitution of another name followed by a photographic copy to conceal the erasures and the registration of this copy in the Probate Judge's office. Or again: The actual impersonation of a physician duly licensed and living, but now totally incapacitated and confined because of an incurable nervous malady.

Cases conforming to the above have but recently been unearthed, and, it must be said that the diligence and pertinacity dis-

played by the local profession in unraveling these cases are not alone commendable but prove anew the alertness and zeal with which the medical profession discharges this important function. The State Board of Medical Examiners has likewise become more keenly alive to its responsibilities in the important matters of licensure and revocation, for just cause as provided in the statutes. The basis of revocation is clearly set forth in Section 2847 of the Medical Practice Act which reads as follows:

"Revoking certificate of qualification to practice medicine—The State Board of Medical Examiners may revoke a physician's certificate of qualification to practice medicine for any of the following: (1) Using spirituous, vinous, or malt liquors, or morphine, opium, cocaine, or other stimulants or narcotics to such an extent as to render him unsafe or unreliable as a practitioner. (2) Being guilty of gross immorality that would tend to bring reproach upon the medical profession of the State. (3) Being guilty of unprofessional conduct of a character likely to deceive, defraud or injure the public in matters pertaining to health. (4) Advertising himself or his practice, whether through newspapers or other periodicals, or by circulars, or otherwise, in such manner as tends to mislead or deceive the public in matters pertaining to health. (5) Inducing or aiding in inducing or attempting or aiding in an attempt to induce a criminal abortion or a criminal miscarriage or a criminal premature delivery of a woman, provided that inducing or aiding in inducing an abortion, or a miscarriage or a premature delivery of a woman when done for the purpose of saving her life, shall not

be deemed criminal, but before resorting to any said methods of saving a woman's life the attending physician shall use due diligence to obtain the advice and help of one or more consulting physicians. (6) Performing an operation of major surgery when his certificate of qualification does not entitle him so to do. (7) Being convicted in any court anywhere, while holding a certificate of qualification to practice medicine, of any offense involving moral turpitude, or for violating any Federal Statute regulating the use or disposition of narcotics, whether committed under color of his professional duty, or connected therewith or not."

Since 1930, The Narcotic Bureau of the Federal Government has been furnishing to all state licensing boards, including our own, a complete list of the physicians who have been fined or convicted for violation of the narcotic laws, as well as a list of known habits among physicians. These receive the careful scrutiny of the Board and such cases which, in its opinion, demand further investigation are given the attention which so important a responsibility calls for. In short, it may truthfully be said that organized medicine in Alabama, functioning through its dual set-up of County Medical Societies and State Board of Medical Licensure, is striving to render an even finer service to the people and to itself by rigidly upholding the high standards set for medical practice as well as by the application of a cleansing and purifying process from within.

J. N. B.

WALSH AND TROJE ON ACTINOMYCOSIS OF THE LUNG AND CHEST WALL: (*Continued from Page 179*)

in about 80% of cases of this type. In their fourteen cases eight had definite history of abdominal abscesses, with draining sinuses preceding the thoracic symptoms. Ten of their fourteen cases occurred in men. They feel that the only roentgenologic sign which helps materially in making the diagnosis of actinomycosis is the involvement of the ribs or sternum. This involvement may be shown by areas of destruction with or without evidence of osteomyelitis around them. They advised frequent roentgenologic examination of the bony walls of the chest. In their fourteen cases five were found to have definite osseous involvement, with destruction of the ribs or the sternum.

Goode⁶ discusses the data obtained from forty cases reported in the literature and

finds that the right lung was involved primarily in twenty cases and the left lung in only fourteen cases, this in contradistinction to West's⁷ series wherein the left lung was involved in seventeen cases and the right lung in eight cases. He thinks that once the disease has attacked the pleura it is only a question of time before the process extends to involve the thoracic cage.

One of the points which should have assisted us to a correct diagnosis before death was the marked edema of the chest wall.

6. Goode, Louis P.: Actinomycosis of the Thorax, Arch. Surg. 21: 786-800 (November) 1930.

7. West, Samuel: Case of Primary Actinomycosis of the Pleura in a Child of Six, with a Table and Analysis of Recorded Cases of Primary Actinomycosis of the Lung and Pleura, Tr. Path. Soc. London, 48: 17, 1897.

THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

OBSTETRIC CLINICS START

The Lee County Medical Society had the honor recently of acting as host to Dr. James R. McCord on the occasion of his first engagement in Alabama as lecturer on obstetric subjects. As announced in previous issues of this Journal, Dr. McCord will hold similar lecture courses on obstetrics at strategic centres throughout the State, so chosen that every physician who so desires may attend one of the series. Birmingham, Brewton, Decatur, Gadsden, Huntsville, Jasper, Mobile, Montgomery, Opelika, Selma, Sheffield, Talladega, and Tuscaloosa have been tentatively selected for future clinics, while the Houston County Medical Society was to be host for the second clinic the week of October 23 to 27. This is written prior to that date. However, its success might be predicted from the reaction of the physicians attending at Opelika. The following is a resolution unanimously adopted at that meeting:

We, the physicians of East Alabama, attending the post-graduate obstetric course being held by Dr. J. R. McCord, Professor of Obstetrics at Emory University, in Opelika with the Lee County Medical Society as host, wish to offer the following resolution:

Whereas, The Bureau of Child Hygiene in Washington has initiated such instruction in an effort to promote better and safer obstetric practice to combat the terrific loss of life in maternity and infancy, and

Whereas, The Medical Association of the State of Alabama has invited Dr. McCord to carry the message and inspiration to the physicians of Alabama to assist them in their efforts to reduce the excessive loss of life which occurs in this State, and

Whereas, Dr. McCord, a master of the art and science of obstetrics, has brought this message, radiating enthusiasm, and delivered it so practically and completely; therefore, be it

Resolved, That the physicians here assembled go forth with a new inspiration to enroll in the campaign for better and safer obstetrics, and be it further

Resolved, That we physicians assure Dr. McCord of our sincere appreciation of his masterful presentation and that his words of wisdom will be our guiding star, and further be it

Resolved, That a copy of this resolution be transmitted to Dr. McCord, The Bureau of Child Hygiene and The State Medical Association.

POLICY REGARDING DISTRIBUTION OF BIOLOGICALS BY AND THROUGH THE STATE DEPARTMENT OF HEALTH

The attention of the profession is called to the memoranda appearing below issued September 11 and 14, respectively, to county health officers and to physicians in counties without health units bearing on manner of distribution of biologicals. The first of these is as follows:

TO THE COUNTY HEALTH OFFICERS:

September 11, 1933.

Pear Doctors:

For your guidance the following facts are set forth regarding the distribution of biologicals and kindred products, effective October 1, 1933:

1. *Diphtheria Antitoxin*—The method of distribution will be that which has prevailed in the immediate past, namely, through you. When such plan was inaugurated a few months ago, you were sent, on consignment, 3-10,000 unit packages. Beginning October 1 you are to have 3-20,000 unit packages and 3-10,000 unit packages. Therefore, you should order through this office the number of packages needed to give you this amount. It is to be issued for use in indigent cases, the usual blank being necessary to indicate that it has been so used. Reorder as occasion demands in order that your stock may be kept at the level indicated above. *Replacements will be made only as the blank showing use of prior stock is filed with this office.*

2. *State-Manufactured Typhoid Vaccine, Diphtheria Toxoid, Tuberculin, Schick Toxin, and Silver Nitrate Ampoules*—These will be furnished as formerly. It is respectfully requested, however, that only such quantities as are actually needed be ordered.

A little later this office is hopeful of being able to give you definite information regarding the availability of arsenicals, preparations of mercury, bismuth, needles and syringes, and distilled water.

J. N. Baker, M. D.,
State Health Officer.

The memorandum to physicians in unorganized counties is equally as important.

TO PHYSICIANS IN COUNTIES WITHOUT HEALTH UNITS:

September 14, 1933.

Effective October 1, this department is hopeful of being able to furnish a limited amount of diphtheria antitoxin for *treatment* of indigent cases. To that end the drug store listed below has been designated a depository for the product. When antitoxin is needed for those unable to pay, sign the blank, (which will be furnished by the druggist) designed to show that the antitoxin is for use in an indigent case. The procedure in this regard is identical, therefore, to that which you followed formerly in obtaining this product.

Attention is directed to the fact that the 1,000-unit dose for *prevention* can be furnished *only* for the members of the immediate family in which a case occurs.

J. N. Baker, M. D.,
State Health Officer.

Depositories designated to serve in the above capacity are as follows:

Autauga—J. E. Wilkinson.....	Prattville
Baldwin—Baldwin Drug Co.....	Bay Minette
Peoples Drug Co.	Robertsdale
Bibb—Meigs Drug Store.....	Centerville
Butler—Bryan Drug Co.....	Georgiana
Ryan Drug Co.....	Greenville
Chilton—Upchurch Drug Co.....	Clanton
Dr. J. J. DuBose.....	Maplesville
Choctaw—Choctaw Drug Co.....	Butler
Clarke—J. H. Megginson.....	Jackson
Peerless Drug Co.....	Grove Hill
Clay—Jordan Drug Co.....	Ashland

Coffee—Bryars-Warren Drug Co.....	Enterprise
Elba Drug Co.	Elba
Colbert—New Globe Drug Co.....	Tuscumbia
Coosa—Goodwater Drug Co.....	Goodwater
Fayette—Barnett Drug Co.....	Fayette
Greene—Eatman Drug Co.....	Eutaw
Hale—J. F. Davis.....	Akron
Henry—Cash Drug Co.....	Abbeville
Cash Drug Co.	Headland
Lamar—Prater Drug Co.....	Millport
Vernon Drug Co.	Vernon
Lowndes*—Norman Drug Co.	Ft. Deposit
Randolph—Driver's Inc.	Roanoke
Russell—J. L. Tew & Son.....	Hurtsboro
St. Clair—Pell City Drug Co.....	Pell City
Winston—Peoples Drug Co.....	Haleyville

*After December 1, 1933.

Finally, reference must be made to the distribution of rabies vaccine and payment for administration to indigents. Effective October 1, 1933, the State Committee of Public Health approved a fee for \$5.00 for this service, the same payable on the basis of certificate of indigence, filed as formerly by the physician. While this remuneration for so important a service is smaller than before, it is hoped that before many months have passed an increase can be made effective. It is believed that in the meanwhile the profession will continue to lend its helpful cooperation.

The State Department of Health wishes to reiterate that its laboratory is continuing to manufacture, and to distribute without cost, rabies vaccine. Despite the severe retrenchments made necessary, the manufacture and distribution of this important product has not been interfered with.

DEPARTMENT OF PUBLIC HEALTH

BUREAU OF ADMINISTRATION

J. N. Baker, M. D.,
State Health Officer in Charge

RELATION OF THE HEALTH OFFICER TO THE COMMUNITY

The State Health Officer, while browsing recently through some of the State Journals which regularly reach his desk, stumbled into an article by Dr. Arlington Ailes, Health Officer of LaSalle, Illinois, which appears in the September issue of the Illinois Medical Journal. This article while most interestingly and simply pre-

sented, carries in it many valuable hints and suggestions which plainly have been garnered from the field of practical experience. There are given below a few excerpts and paragraphs from this article which, when read by our workers in the field, will justify the conclusion that Dr. Ailes knows whereof he speaks and that he speaks from his heart. Measured by his standards, to be successful, a health officer should have, over and above scientific attainments, vision, patience, diligence, political acumen and all of the cardinal virtues rolled into one, and he at least fixes a goal

for which every health officer may strive. To quote:—

"I knew a health officer, who, a few years ago, was invited to leave his community, where he had been quite successful, to become health commissioner of a larger city, at an increased salary. He was offered a contract for only one year, but demanded at least a three-year tenure, because, as he said, at the end of one year he would just be getting a comprehensive grasp of the population complex or the community background, and the real needs of the community, and how best these needs could be attained. . . Suffice to say this man was given a three-year contract, made good in the new field, but needed the entire time to reorganize, harmonize, and coordinate the various groups and build up an efficient health department. Therefore a reasonable tenure of office is among the first considerations that a community owes its health officer and also itself".

"We often listen to papers read at our health meetings, in which the author is extolling the virtue of some health practice he has developed in his community. . . . His may be a wealthy suburban community, in which the sanitary problems have all been solved, including the water and milk supplies. Such people are apt to be highly intelligent, with a consequent low birth rate; these people can be also expected to have instead a so-called high "girth" rate, with a consequent high adult sickness rate due to the stress of living as well as the effects of luxury and ease. . . . This health officer might, conceivably, have to deal with problems that most of us know little about, such as a large Christian Science group, or the followers of chiropractic, physical culture or other groups or cults, that frequently infest, like a disease, the so-called intelligentsia. In fact most health officers may not be able to adjust themselves at all to this type of community. It may require a man of special temperamental fitness to make a success here. On the other extreme a community may be so backward in sanitary progress, or so poor, that the fundamentals of sanitation may be major health problems for a number of years."

"The health officer has a great responsibility in his community and to his commu-

nity. If no epidemic of devastating importance occurs the community is considered fortunate; but if one does occur some one must be blamed, and it is always the health officer. His foresight must equal his after-sight. In fact he must continually foresee and forestall to maintain his status quo. And unless he is a good advertiser or has a good press agent, the public may never appreciate his valuable services."

"An illustrative case occurred in an eastern city a few years ago. In this city there were signs for many months that all was not well with the city water supply. Finally a terrible epidemic of typhoid fever occurred causing hundreds of cases of illness and taking many lives. There also remained as an aftermath more than twenty typhoid carriers and numerous persons with impaired health, so that damage suits and judgments against the city ran to nearly two million dollars. Sure the health officer was dismissed for failure to recognize the signs, to foresee results, and to take proper preventive measures. An interesting fact in this connection was that the county health officer lived in this city, had authority over the county, but not over this particular city of the county. He recognized the danger, warned the local department, and boiled the water used by his own family. He was severely censured after the epidemic because he had not become a crusader, cried his message of warning from the house tops and forced some attention to the matter. But if he had, how about his meddling if the epidemic had not occurred? Needless to say that the law governing county health departments in this State was changed, giving the county health officer authority over such matters in the future. Therefore, it is apparent that the prevention of disease is still the first duty of a health officer to his community."

"The purification of the water supply and the requirement for the abandonment of private wells, a milk pasteurization ordinance, or the adoption of any new sanitary ordinance will offend certain elements or groups, but is necessary for the common good. Likewise the adoption of adequate measures to immunize the public against smallpox and diphtheria may offend other groups, including the medical profession, or only certain members of it. Usually some

agreement can be arrived at, but it is exceedingly difficult to satisfy every single member of any group. The majority is, however, usually fair and the majority should be satisfied before any program is carried out. Sometimes the health officer can make haste by going slowly and allow for changing opinion within objecting groups, yet some of this work must be done. In the case of immunization it must be done either by the physicians, or by the health department or by a cooperation of both, or in time the health officer must answer to public opinion for the failure. This is true of other measures for the public welfare—the health officer must somehow get it done or answer to public opinion sooner or later. Therefore the health officer needs the sympathy, patience, cooperation, and encouragement of all groups in the community, to the end that the whole community may progress in public health.”

“Less urgent, however, is the public health education of the masses, special groups, and in the schools; but extreme caution, tact and care is here necessary. Too many health articles or radio talks or too much usurpation of the rights of the school teacher to teach health in her own way may well tread on too many toes and center too much enmity on the health officer at one time for him to withstand. I once knew an enterprising but aggressive health officer in a fairly large mid-western city to lose his job because of too much publicity. It is better to submerge oneself somewhat behind the active public health groups of a community than to stand out in front too much.”

“It now becomes apparent and manifest, that if a community is to get the maximum health benefits, its health officer must be specially trained. . . . No general practitioner can adequately or properly do all these things, without special aptitude, thought and training, no more than he can adequately care for the eye, ear, nose and throat specialty without special training. Public health is a specialty just as much as any other specialty, and to get the best results a whole time, specially trained man should be in charge.”

“People’s habits and customs can not be changed over night. ‘Evolution and not revolution’ should be the motto. Many times

in our schools, parent-teacher associations, women’s clubs, and other groups we must educate and re-educate. Public health like medicine constantly changes, new knowledge is born, and new emphases must be placed here and there, and it takes special study and constant application to keep abreast of this field. . . . Vision, knowledge, perseverance, patience, tact and fairness to all groups, are all important assets of a health officer in relation to his community.”

BUREAU OF LABORATORIES

James G. McAlpine, Ph.D., Director

AGGLUTININS

THEIR SIGNIFICANCE IN VARIOUS DISEASES

II. Undulant Fever

The growing importance of undulant fever as a public health problem has caused a more critical attitude to be taken towards the various laboratory methods of diagnosis. At present, although the agglutination test is considered the most valuable, it has certain limitations which must be taken into account. If not, a certain number of cases may be missed or wrongly diagnosed.

A great deal of discussion has taken place on the minimum dilution which possesses diagnostic significance. An arbitrary standard of complete agglutination in 1:80 dilution has been set up which many workers take as conclusive evidence of the disease. However, the fallacy of using such a standard as final in all cases can be seen by a survey of the literature.

Carpenter and Boak¹ report that six per cent of the cases which have come under their observation showed no agglutinins; that twelve of fifty serums from undulant fever patients had titers of 1:400 while the others showed titers from zero to 1:32,805; and that severe cases sometimes have maximum titers of 1:15 and 1:30. Giordano and Sensenich² believe that a dilution of 1:40 or higher generally indicates active infection, but the titer may vary

1. Carpenter, C. M., and Boak, R. A.: Laboratory Diagnosis of Undulant Fever, *J. Lab. & Clin. Med.* 15: 437-443 (Feb.) '30.

2. Giordano, A. S., and Sensenich, R. L.: Brucella Abortus Infection in Man, *J. Lab. & Clin. Med.* 15: 421-436 (Feb.) '30.

from 1:5 to 1:20,000. Hardy et al³ think that, "it is probable that a generalized infection ordinarily produces agglutination in high titer (1:80 or higher)." Welch and Mickle⁴ are of the opinion that a 50 per cent agglutination in the 1:300 dilution constitutes a conservative arbitrary standard for routine work. However, Mickle⁵ states "dilutions below 1:500, in our opinion, have little value except when there is clinical evidence of the disease, but many clinicians feel that lower titers have significance. Usually we find the titer goes out 1:3,000 or beyond in clinical cases." Therefore, each case must be taken as an entity and the laboratory reports correlated with the clinical findings, before a final diagnosis can be made with certainty.

When the results of any agglutination test are considered, the question of past or present infection becomes paramount. Evans⁶ tested five hundred human serums from patients who were suffering from various diseases and found that fifty-nine or 11.8 per cent agglutinated *Br. melitensis* in dilutions of 1:5, or higher. She suggests that "the agglutinins were produced as a specific response to *Br. melitensis* ingested in cow's milk, although such an infection may not necessarily have caused a notable illness." If such is the case, it is important to know how long agglutinins may persist after the active focus of infection has subsided. Carpenter and Boak¹ are of the opinion that they usually remain in the blood for a long time. They cite three cases of undulant fever whose blood serums were tested monthly for approximately two years. At the end of this period one agglutinated in 1:45 dilution, another in 1:405 and the third in 1:1,215. Hardy et al³ state that in 45 cases where bloods were examined 12 or more months after the disease was first diagnosed, 15 failed to show any agglutinins above 1:20; 5 were completely negative; and 30 still had agglutinins in

1:40 dilution or higher. Hence in the interpretation of the reports of the agglutination test, the persistence of reacting bodies from a previous infection must always be considered.

Hardy et al³ have summarized their views on the subject as follows: "(1) mild or subclinical *Brucella* infection with production of agglutinins does occur at times associated with other diseases; (2) specific agglutinins may sometimes persist in the blood stream for more than one year after clinical recovery from undulant fever; (3) infection, even severe infection, may occasionally occur without any production of demonstrable agglutinins. In general, however, we believe the following interpretation holds: Titers below 1:40 are of slight clinical significance; 1:40 of doubtful significance; 1:80 weakly positive; 1:160 and 1:320 positive, 1:640 and above, strongly positive."

Another factor which has caused some confusion in the interpretation of the results of the test is the cross agglutination which sometimes occurs with the serums of patients suffering from other diseases. Francis and Evans⁷ have reported that cases of tularemia frequently show this phenomenon. Usually the wide difference in titer serves to establish the identity of the infection. This subject will receive further discussion in the article on tularemia.

Gibbes⁸ has presented data which question the reliability of the agglutination test in undulant fever as performed in our public health laboratories. He believes that as yet it is not properly standardized either "in its performance or interpretation." Many workers have noted the lack of agreement in the results from different laboratories. It is probable that the selection of the strain or strains which are employed in the test has a great influence both on the final result and the titer attained. Although Strong⁹ states that "there is no necessity either in the United States or Great Brit-

3. Hardy, A. V., et al: Undulant Fever, with Special Reference to Study of *Brucella* Infection in Iowa, Pub. Health Rep. 45: 2433 (Oct. 10) '30; 2525 (Oct. 17) '30.

4. Forty-seventh Annual Report of the Connecticut State Department of Health, 1932.

5. Mickle: Personal Communication, 1933.

6. Evans, A. C.: Malta Fever; Cattle Suggested as a Possible Source of Infection, Pub. Health Rep. 39: 501-518 (Mar. 14) '24.

7. Francis, E., and Evans, A. C.: Agglutination, Cross-Agglutination, and Agglutinin Absorption in Tularemia, Pub. Health Rep. 41: 1273-1295 (June 25) 1926.

8. Gibbes, J. H.: Results of Agglutination Tests for Undulant Fever, South. M. J. 24: 126-128 (Feb.) 1931.

9. Strong: Nelson's Loose Leaf Living Medicine, 2: 209-212, Thomas Nelson and Sons, 1929.

ain to use more than one strain of brucella (*Brucella melitensis* or *Brucella abortus*)" there is evidence to show that this procedure leads to error in the diagnosis of some cases. Good, Dimock and Harnes¹⁰ have emphasized the use of polyvalent antigens in the routine diagnosis of infectious abortion of cattle, and, since *Brucella abortus* of bovine origin causes many cases of undulant fever, their observations should apply to the agglutination test on human serums. Another cause for the discrepancy in the results of different laboratories is undoubtedly the various densities of the antigens used. Evans⁶ states "the figures of different workers can not be accurately compared unless the conditions under which the tests were carried out were similar."

Since the agglutination reaction is subject to so many limitations, attempts have been made to evolve other more accurate methods of diagnosis. The blood culture, although certain when positive, is not suited to ordinary routine analysis, owing to the time interval before reports can be obtained and the large percentage of failures in typical cases. Giordano¹¹ has used the intradermal test with success and his results have been corroborated by others. Nevertheless, as Huddleston, Johnson, and Hamann¹² have remarked "the methods of diagnosis (serological and allergic) "are not always satisfactory in detecting many cases of the disease in man. Again, there are times when the results of the serological or allergic tests are misleading which in turn may result in an incorrect diagnosis." They have developed a new reaction which estimates the opsonocytophagic power of the patient's blood, and which they believe, if taken in conjunction with the allergic skin test, gives an index of the susceptibility, infection, and immunity of the patient. As yet sufficient data are not available to properly appraise its value. Hence, until something better is de-

veloped, the agglutination reaction continues to be the most applicable laboratory method of diagnosis. But much research is necessary before it can be properly standardized.

BUREAU OF PREVENTABLE DISEASES

D. G. Gill, M. D., Director

HISTORY OF TYPHUS FEVER

A BRIEF SUMMARY

Typhus fever is probably one of the oldest diseases known to man. The writings of Hippocrates give accounts of what was apparently the disease. The earliest unmistakable reports, however, date to the year 1463 when the disease was described by Jacobus DePartibus and by the German Agricola.

To Fracastorius, a historian of the 16th century, is due credit for the first lucid description of the disease positively distinguishing it from other diseases, especially plague. It is believed that many outbreaks of disease designated as plague during the middle ages were undoubtedly epidemics of this disease; thus the plague which raged throughout Italy from 1505 to 1528, and the disease "morbus hungaricus" which devastated the army of Charles the Fifth in the year 1552. The plague in Hungary and Mecca in 1556, in Denmark 1613 to 1652, and in Leyden in 1669, other epidemics of later times such as the disease that raged in Vienna from 1757 to 1759, and the disease that spread over the entire German Province in 1771 are regarded by many as being epidemics of typhus fever. During the Thirty Year War more persons died from the disease than from the weapons of warfare. It was a terror during the campaigns of Napoleon. Germany was visited by it in 1793 and 1794, and again in 1796 and 1797, and in 1805 it became epidemic throughout Galicia, Hungary and the Austrian Provinces. From 1816 to 1826 the disease raged throughout England and Ireland. In Ireland one-eighth of the inhabitants, and in the City of Dublin one-third were attacked. Over 40,000 deaths were recorded.

During the famine of 1846 a severe epidemic broke out again in Ireland which

10. Good, E. S., Dimock, W. W., and Marnes, A. H.: Comparative Agglutinating Properties of Different Strains of Bact. Abortus (Bang), J. Am. Vet. M. A. 73: 223-231 (June) 1928.

11. Giordano, A. S.: Undulant Fever; Recent Studies, J. Indiana M. A. 22: 135-141 (April) 1929.

12. Huddleston, I. F., Johnson, H. W., and Hamann, E. E.: A Study of the Opsono-Cytophagic Power of the Blood and Allergic Skin Reaction in Brucella Infection and Immunity in Man, Am. J. Pub. Health 23: 917-929 (Sept.) 1933.

spread to England, one million cases occurring in England, and 300,000 in Ireland. During the Crimean War it decimated both French and English armies, and during the Italian Wars of 1861, and the Turko-Russian War of 1878 the disease took an enormous toll of lives. Of 200,000 soldiers in the Russian Army, fifty per cent were attacked, half of whom succumbed to the disease.

Typhus fever last prevailed in epidemic form in the United States, in New York City, in 1881, and in Philadelphia in 1883, and again in New York City in 1892. Following the epidemic of 1892 it was the opinion of many that the disease had disappeared from the United States, except for an occasional sporadic case in certain seaport towns. This idea prevailed until 1910 when Dr. Nathan Brill described a disease in New York City which was very similar both clinically and epidemiologically to typhus fever. Two years later Anderson and Goldberg proved that the virus of this disease, Brill's, and Mexican typhus (tabardillo) were identical.

For many years the relationship between crowded living conditions and typhus had been recognized. It was not, however, until 1909 that the exact means of transmission was known. In this year Nicolle reported the transmission of the disease by the bite of the body louse (*Pediculus vestimenti*). Prior to this discovery it was the general opinion that the disease was transmitted by the inhalation of the organism from infected individuals. The suggestion that some vector other than the louse might be responsible for the transmission of the disease was made by Brill, Allen, and Maxcy. In 1923 Maxcy suggested the flea as a possible vector, but never thoroughly substantiated his claims. In 1930, Dyer, Rumreich, and Badger definitely established the transmission of the disease by the rat flea (*Xenopsylla cheopis*). In 1931, these workers continuing their study determined that the disease was transmitted through the feces of infected fleas, the virus reaching the body through rubbing of infected feces from the flea into wounds made by the bite of the flea or through abrasions on the skin produced by scratching.

Typhus fever was first reported in Alabama in 1922. During the year there were

ten cases reported, six of which were in the City of Montgomery. Although this marks the first official record of the disease in Alabama, there is little doubt but that it was in existence in sporadic form for years prior to the first reported cases. In 1923, fourteen cases, and in 1924, nineteen cases were reported. From 1925 to 1931, inclusive, from forty-eight to eighty cases were reported yearly, the average number for the seven year period being sixty-four. In 1932 and 1933, there was for some unknown reason a prodigious increase in the number of cases reported, 237 being reported in 1932, and 600 the first ten months in 1933. Practically all of the cases have been reported from the southeastern section of the State, including the counties of Barbour, Coffee, Conecuh, Covington, Crenshaw, Dale, Dallas, Escambia, Geneva, Henry, Houston, Lowndes, Macon, Monroe, Montgomery and Pike.

Should the present rate of increase be permitted to continue the disease would reach an enormous proportion in this section of Alabama within a few years. The State Health Department, in cooperation with the United States Public Health Service, is therefore, instituting control measures in this section of Alabama. It is anticipated that there will be a reduction in the case rate when these control measures are well under way.

W. E. W.

REFERENCES

Nothnagel's Encyclopedia of Practical Medicine.
Public Health Reports.

BUREAU OF SANITATION

G. H. Hazlehurst, Director

THE SMALL WATER SUPPLY IN ALABAMA

The sources of private and semi-private water supplies in Alabama are mainly underground and the water is obtained from wells or springs. The quantity and quality obtainable by these means naturally vary. The quality of ground water depends upon the presence or absence of sources of pollution, the filtering properties of the soil or rock through which the raw water percolates, the distance between sources of pollution and the well or springs, and the solubility of the materials through which the

water moves. It is obvious that when wells penetrate limestone or shale containing open channels, the water will dissolve the limestone and other minerals and will also likely contain substances washed from the surface of the ground due to the imperfect filtration in the rocks penetrated by the water. On the other hand, rain water passing through insoluble sand will be soft and usually of satisfactory quality because of the natural filtering ability of the sand. Due to the great variation of these factors, it is not possible to make general statements regarding the quality of well or spring water as each case is a separate problem. It may be stated, however, that ground water from limestone districts should generally be regarded as of suspicious sanitary quality unless the results of a series of bacteriological examination results show to the contrary.

Wells should not be located in the immediate vicinity of sources of pollution and should not be constructed on ground which is of lower elevation than the sources of pollution. No definite statement can be made in regard to the distance which should separate possible sources of pollution and wells. The many uncertain factors influencing the case make each a separate problem.

Pollution may enter wells in two ways. First, pollution can percolate through the rock or soil with the rain water and enter the well with the main body of water from which the well is supplied. Second, pollution may enter the well at the top or near the top if suitable protection against this mode of ingress is not supplied.

Nothing can be done to prevent the entrance of polluted ground water into wells other than to remove the sources of pollution. Fortunately, in most of our State polluted ground water is rather rare. It is only in lime rock or shale formations that we would usually expect to encounter such a condition. If this condition should obtain, as evidenced by continual bad results on bacteriological examination of samples, and it is known that the well is properly protected, then these procedures for correction remain: the removal of the sources of pollution, if they can be found; changing the location of the well; or treating all of the drinking water coming from the well with a proper disinfectant.

Protecting the well against surface water or back drip contamination can be accomplished. In dug wells the curb should be built water-tight from six to ten feet below the surface of the ground, depending on the character of the surrounding soil. The well should then be covered with a water-tight platform. These platforms should be of concrete. If wood must be used, it should be covered with an impervious material such as tin or metal roofing with waterproof joints.

A submerged cylinder pump should be used. Only a pump which does not have to be primed is safe, as the priming water may be contaminated. If the pump can not be located off to the side of the well, then the joint between it and the platform must be made water-tight. A drain trough should carry any spilled water at least six feet away from the well.

Driven or drilled wells are easier to protect against surface pollution. The well casing should be extended above the surface of the ground six inches or more and a concrete apron placed around the well at least two feet in all directions. It should not be forgotten to provide the drain to carry away spilled water.

Springs are of two types—deep seated and shallow. This classification is made on the source from which the waters come. The deep seated springs are supplied with water probably from remote areas flowing along above an impervious stratum of clay or rock until such stratum or rock outcrops. The shallow springs are usually found where the ground water, in porous surface strata, reaches the surface of the ground at low points. The deep seated springs usually furnish a better water from a sanitary viewpoint. The shallow springs usually are supplied by nearby watersheds and which are thus exposed to pollution.

All springs should be provided with protection against surface water. This protection should be of water-tight walls which rise at least a foot above the surrounding ground. Tight roofs or covers should be supplied and if openings into the spring are necessary they should be provided with locked covers or doors to preclude unauthorized entrance. Overflow pipes should be provided to carry the waste water away from the immediate vicinity and diversion ditches should be cut above the spring to

carry surface water around and thence below the spring. Structures holding spring water should be light proof to inhibit algal growths.

Bacteriological examinations of water supplies which are not protected at the top against possible contamination or surface pollution are practically valueless.

T. H. M.

CURRENT STATISTICS

*PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA

Estimated
Expectancy
August September September

Typhoid	128	98	260
Typhus	87	143	13
Malaria	589	1320	697
Smallpox	1	1	9
Measles	36	53	30
Scarlet fever	64	187	103
Whooping cough	80	92	75
Diphtheria	113	326	240
Influenza	33	84	21
Mumps	10	23	15
Poliomyelitis	1	6	7
Encephalitis	2	5	2
Chickenpox	2	3	14
Tetanus	6	3	5
Tuberculosis	285	250	355
Pellagra	37	99	45
Meningitis	1	3	4
Pneumonia	42	68	61
Syphilis (private cases)	181	292	166
Chancroid (private cases)	0	2	9
Gonorrhea (private cases)	172	168	232
Ophthalmia neonatorum	1	3	1
Trachoma	0	0	1
Tularemia	0	0	0
Undulant fever	1	0	2
Dengue	2	0	3
Rabies—human cases	1	0	0
Positive animal heads	51	47	—

*As reported by physicians and including deaths not reported as cases.

The Estimated Expectancy represents the median incidence of the past nine years.

PROVISIONAL MORTALITY STATISTICS

Alabama, August 1933

CAUSES	Number of Deaths Registered August 1933			Annual Rate per 100,000 Population		
	White	Colored	Total	Aug. 1933	Aug. 1932	Aug. 1931
ALL CAUSES	1183	999	2182	937.4	929.5	942.1
Typhoid fever	10	7	17	7.3	5.7	14.9
Smallpox						
Measles	1		1	0.4		1.7
Scarlet fever	3	3	6	1.3	0.4	0.4
Whooping cough	7	9	16	6.9	8.7	3.9
Diphtheria	16	1	17	7.3	7.0	3.9
Influenza	9	6	15	6.4	9.1	4.8
Pneumonia, all forms	34	26	60	25.8	32.2	31.1
Poliomyelitis	1		1	0.4		
Tetanus	1	4	5	2.1	2.6	2.6
Tuberculosis, all forms	63	95	158	67.9	71.0	85.4
Tuberculosis, pulmonary	58	86	144	61.9	66.2	76.2
Malaria	19	17	36	15.6	10.4	11.8
Cancer, all forms	97	34	131	56.3	52.7	50.3
Diabetes mellitus	16	6	22	9.4	8.7	9.6
Pellagra	11	21	32	13.7	14.8	19.7
Cerebral hemorrhage, apoplexy	68	41	109	46.8	50.1	54.7
Diseases of heart	158	118	276	118.6	113.2	102.4

Diarrhea and enteritis						
Under 2 years	57	25	82	35.2	23.5	38.1
2 years and over	21	11	32	13.7	12.6	7.4
Nephritis	93	76	169	76.9	80.5	76.6
Puerperal state, total	11	18	29	12.5	17.8	13.6
Puerperal septicemia	2	4	6	2.6	5.7	3.9
Congenital malformation	9	4	13	5.6	5.7	7.9
Congenital debility and other diseases of early infancy	76	44	120	51.5	57.5	52.1
Senility	8	23	31	13.3	15.2	12.7
Suicides	12		12	5.1	6.1	6.6
Homicides	14	39	53	22.8	19.6	18.4
Accidental burns	1	6	7	3.0	2.2	3.1
Accidental drownings	4	8	12	5.1	7.8	4.8
Accidental traumatism by firearms	3	5	8	3.4	3.5	1.7
Mine accidents	1	3	4	1.7		0.4
Railroad accidents	7	9	16	6.9	5.2	2.6
Automobile accidents	33	19	52	22.3	17.4	23.2
Other external causes	43	21	64	27.5	23.1	27.1
Other specified causes	205	145	350	150.4	155.4	144.0
Ill-defined and unknown causes	73	158	231	99.2	89.7	103.7

Book Abstracts and Reviews

The Diseases of Infants and Children: By J. P. Crozer Griffith, M. D., Ph.D., Emeritus Professor of Pediatrics in the University of Pennsylvania; Consulting Physician to the Children's Hospital, and St. Christopher's Hospital for Children; Consulting Pediatricist to the Woman's, the Jewish and the Misericordia Hospitals, Philadelphia, and A. Graeme Mitchell, M. D., B. K. Rachford Professor of Pediatrics, College of Medicine, University of Cincinnati; Medical Director and Chief of the Staff of the Children's Hospital Research Foundation; Director of Pediatric and Contagious Services, Cincinnati General Hospital. 1,155 pages with 281 illustrations. Philadelphia and London. W. B. Saunders Company, 1933. Cloth. \$10.00 net.

Another good book has been added to Saunders' list for the student and practitioner. Anyone who possesses the previous two volume edition of this work is hardly justified in buying this new book. Of course, there are some new additions, especially in the acute infectious diseases, but the form of publication is far inferior to the previous edition. The amount of added information does not compensate for the lack of references in detail as before.

R. P.

The Technic of Local Anesthesia: By Arthur E. Hertzler, A. M., M. D., Ph.D., LL.D., F. A. C. S., Professor of Surgery in the University of Kansas; Surgeon to the Halstead Hospital and St. Mary's Hospital and St. Luke's Hospital, Kansas City, Missouri; and to the Providence Hospital, Kansas City, Kansas. The C. V. Mosby Company, Publishers. St. Louis, Mo. Fifth edition. 292 pages with 148 illustrations. Cloth. Price \$5.00 net.

The author of this book is reputed to be one of the most tireless workers and prolific writers in America. His writings cover almost the entire field of surgery and surgical pathology. His experience as a surgeon has given him good judgment and his experience as a writer has taught him how to write clearly and interestingly. His book on local anesthesia, though brief, is so clearly written and so well illustrated that it covers the subject as thoroughly as the larger works on the same subject.

There has been comparatively little new work on the subject of local anesthesia during the past few years, hence one must not expect liberal changes in this new edition. The chapters on spinal and intravenous anesthesia have been re-written. There is a valuable paragraph on the use of diothane, injected into the base of a hemorrhoid before excision to prevent post-operative pain. Doctor Hertzler is a firm believer in the use of minimum amounts of anesthetic solutions, used in com-

paratively weak strengths but deposited at the point where it will do the most good.

C. K. W.

Nervous Breakdown: Its Cause and Cure, by W. Beran Wolfe, M. D., Director, The Community Church Mental Hygiene Clinic, N. Y. Farrar and Rhinehart, Inc., Publishers, New York. 240 pages. Cloth. Price \$2.50.

Of all the patients who enter a physician's consulting room, there are none who cause him more worry and annoyance than the neurotic who whines and complains of his many symptoms but who shows no pathologic basis to account for them. Such a type of patient has met with little sympathy and little understanding. Generally he has been branded as a neurotic and dropped into a pigeon-hole with those whom the physician wishes to avoid. The physician has failed to realize that his disease is as real as typhoid fever or a fractured femur.

This little book of Doctor Wolfe's, though written primarily for the patient suffering from a nervous breakdown, should appeal equally to the physician who has to treat such patients. The facts presented are simple and clear and unencumbered by scientific description. Whether the book will serve its purpose in the hands of a patient is doubtful but it would at least serve to direct the patient's attention to the fact that other people suffer with symptoms similar to his, that his disease is curable, and that his best chances of cure depend upon his consulting a reliable psychiatrist. It should also be a valuable book for the family of such patient to read, suggesting to them ways in which they may help rather than retard the progress of the patient. The physician should find this little book light, entertaining reading.

C. K. W.

Migraine. Diagnosis and Treatment: By Ray M. Balyeat, M. A., M. D., F. A. C. P., Associate Professor of Medicine and Lecturer on Diseases Due to Allergy, University of Oklahoma Medical School; Chief of the Allergy Clinic, University Hospital; Consulting Physician to St. Anthony's Hospital and to the State University Hospital; President of the Association for the Study of Allergy 1930-1931; Director, Balyeat Hay-Fever and Asthma Clinic, Oklahoma City, Oklahoma. 242 pages. 26 illustrations. J. B. Lippincott Company, Publishers, Philadelphia, 1933. Cloth. \$3.00.

There are probably few complaints which bring more patients to the doctor's office than the complaint of headache and a large proportion of those complaining of headache have so-called migraine or familial headache. The severity of their symptoms and the frequency of their attacks make these patients miserable and worry their doctors considerable. The nature of migraine has never been clearly understood and the treatment of attacks has consisted largely of the administration of an analgesic or narcotic. There has recently appeared a group of articles by several allergists in which evidence has been offered to favor the allergic nature of migraine. In Balyeat's book a series of 350 cases has been analyzed and 65 cases presented to illustrate the high points in the nature, diagnosis and treatment of the disease. The author has presented evidence to show that migraine is a familial disease and is interchangeable with hay-fever, asthma and urticaria in the link of allergic inheritance. He has defined accurately the nature of the disease, giving in detail the symptoms of the pro-

dromal, aural and post-migrainous stages as well as those of the attack itself. He offers a physiopathological explanation of the symptoms, gives a table showing the relative frequency with which the different foods cause attacks and presents the results of treatment through the elimination of the offending foods. The success of his method of treatment offers hope to thousands of people whose headaches have made a large part of their time almost unbearable.

C. K. W.

Obstetrics and Gynecology: By 80 Leading Specialists. Edited by Arthur Hale Curtis, M. D., Professor and Head of the Department of Obstetrics and Gynecology, Northwestern University Medical School; Chief of the Gynecologic Service, Passavant Memorial Hospital, Chicago, Ill. Complete in three volumes and separate desk index. 3,500 pages with 1,664 illustrations, many in colors. Philadelphia and London. W. B. Saunders Company, 1933. Cloth. \$35.00 per set.

Conscientious reviewing is a tedious and difficult task. A book written by a single author can be reviewed by looking over the contents and reading half a dozen chapters, thereby getting an accurate idea of the scope of the work, the style of the author and a general comparison with other books on the same subject, but when one reviews a book containing contributions by many authors, he must read the entire book to be able to give a fair opinion of it. Doctor A's chapter may be excellent, Doctor B's mediocre, Doctor C may be long-winded, Doctor D brief, clear and concise. And then there is the editor's responsibility to see that every subject is thoroughly covered without any overlapping of descriptions. It is a waste of space to have a description of gonorrheal salpingitis in the chapter on "Gonorrhea in the Female" and another in the chapter on "Diseases of the Fallopian Tubes". So a fair review of a book such as this one requires careful reading.

The Reviewer stated in a previous issue of this Journal that the first volume of Curtis' "Obstetrics and Gynecology" gave promise of an excellent set of books. The second volume confirms that opinion. Half of this volume is devoted to obstetrics—the complications of labor, contracted pelvis, fetal abnormalities, hemorrhage, infection, breech delivery and cesarean section. The latter half of the volume is devoted to gynecology. The chapter by Howard A. Kelly on the History of American Gynecology is particularly interesting to anyone who likes to delve into historical medicine. The chapter on "Non-specific Infections" by Norman F. Miller is practical and particularly valuable. It contains extremely little on the subject of trichomonas vaginalis vaginitis—a disease which is extremely prevalent in this section. The indications for expectant, radiation and operative treatment of fibroids are clearly defined in a chapter by William P. Graves.

Overemphasis on interesting diseases rather than the more important and more frequently encountered conditions is one of the inherent disadvantages of any system to which several authors make contributions. In Curtis' system far more space is devoted to tuberculosis of the genital tract than to gonorrheal disease, yet on the whole, the book is well edited and the material wisely chosen.

C. K. W.

Miscellany

ADVERTISERS' NOTES

Borden's Evaporated Milk

Borden's Evaporated Milk, which is now enjoying such a great vogue in infant feeding, is manufactured only from pure, full cream milk from healthy, inspected cattle in the richest dairy regions of America.

"This product," says a scientific pamphlet, which is accepted by the Committee on Foods of the American Medical Association, "precisely fulfills the exacting requirements of safety, digestibility and assimilability, uniformity, stability, and nutrient quality demanded by the physician for the infant feeding formula."

That this is so has been demonstrated by many clinical tests on large groups of babies, as well as by the experience of physicians with innumerable individual cases. Of particular interest is a recent study by Jeans and Stearns (*Am. Jour. Dis. Childr.* 46:69, July 1933) showing that the retentions of nitrogen, calcium, and phosphorus by infants on evaporated milk are approximately the same as those of infants fed on undiluted acidified fresh milk.

Evaporated milk, says Tobey in his new book, "Milk, The Indispensable Food" (Olson, 1933), is the most digestible form of milk; this author also points out that the important vitamins A, D, E, and G are not appreciably affected when milk is evaporated, although there may be a slight loss of vitamin B and destruction of vitamin C. Since these vitamins are easily replaced in the diet by the supplementary foods routinely given to all babies, such as orange juice, this slight loss is of no practical significance and is more than compensated for by the many other advantages of a product such as Borden's Evaporated Milk.

Mead's 10 D Cod Liver Oil

Professors Drummond and Hilditch have recently confirmed that for high vitamins A and D potency, Newfoundland Cod Liver Oil is markedly superior to Norwegian, Scottish and Icelandic Oils.

They have also shown that vitamin A suffers considerable deterioration when stored in white glass bottles.

For years, Mead's Cod Liver Oil has been made from Newfoundland Oil. For years,

it has been stored in brown bottles and light-proof cartons.

Mead's 10 D Cod Liver Oil also enjoys these advantages, plus the additional value of fortification with Mead's Viosterol to a 10 D potency. This ideal agent gives your patients both vitamins A and D without dosage directions to interfere with your personal instructions. For samples write Mead Johnson & Company, Evansville, Ind., U. S. A., Pioneers in Vitamin Research.

Cocomalt

Recent developments in the study of child nutrition emphasize anew the importance of milk. It is and always will be the mainstay of the child's diet; and the continued refusal of a youngster to drink sufficient milk for his needs is indeed a serious problem.

Fortunately it is possible to convert milk into a drink all children adore. By the simple addition of Cocomalt, milk not only becomes a delicious chocolate flavor drink—but its food-energy value is practically doubled. Cocomalt in milk provides extra proteins, carbohydrates and minerals (calcium and phosphorus). It is also a rich source of Vitamin D.

Thus Cocomalt not only induces youngsters to drink all the milk they require—it provides extra food-energy nourishment as well.

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1. *J. Soc. Chem. Ind.*, 1923, 42, 185, 205.



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EPIGASTRIC HERNIA*

By

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I ask no apology for addressing you on this subject, but I think a few words of explanation would be worth while.

Epigastric hernia deserves our attention because of its ability to produce a large number of prominent symptoms while being of such a small size as to escape easy recognition. It cannot be compared very well to the more common inguinal and femoral hernias as it rarely becomes strangulated and is infrequently larger than the end of the little finger.

Epigastric hernia is no recent discovery. According to Friedenwald and Morrison, Arnauld De Venlleneuve described it in 1285, or over two centuries before Columbus' first trip to America. It has never been enthusiastically received because it is a relatively rare condition.

Epigastric hernia is usually defined as a hernia appearing in the linea alba between the ensiform cartilage and the umbilicus. A brief review of the anatomy in this region will give us a better understanding of our subject.

The linea alba is the tendinous band in the abdominal middle line formed by the fusion of the anterior and posterior layers of the rectus sheath. The sheath is formed by the aponeurosis of the oblique and transversalis muscles. The linea alba varies in width depending upon the distance separating the recti muscles. It is very narrow in the lower abdomen where the recti are well developed and insert close together in the pubis. Extending upward the linea alba widens to reach its greatest width a short distance above the umbilicus. Here it has a diameter of from one-half to one inch. It then becomes narrower approach-

ing the ensiform cartilage (Fig. 1). In the linea alba the tendinous sheath alone separates the peritoneum and transversalis fascia from the subcutaneous fat. Consequently any herniation through this aponeurotic layer is detectable by palpation over this area.

The linea alba is pierced five times on each side of the middle line by the terminal branches of the intercostal nerves and their accompanying blood vessels.

The falciform ligament extends from the umbilicus to the diaphragm along the inner side of the linea alba. It is formed by a fold of peritoneum which surrounds a layer of fat and the round ligament.

There are several features which explain the occurrence of hernia through this single layer of tough aponeurosis. The small openings for the passage of the vessels and nerves offer ideal opportunities for the entrance of a small wedge of fat. The ring is further enlarged by a stretching or displacement of the adjacent fibers. The herniation may result from separation of the loosely bound interlacing aponeurotic fibers without the assistance of a normal opening.

The aponeurosis of the linea alba is formed by the crisscrossing of the fibers from the oblique and transverse muscles. The fibers meet each other almost at right angles and small openings near the middle line can often be found where the fibers do not closely approximate. The obliques and transversus muscles are all fan-shaped inserting in front over a greater area than that from which they arise at the side and back. This means that the aponeurotic fibers are less compact in the middle line at the widest part of the fan (Figs. 2 and 3).

A sudden increase in intra-abdominal pressure may force a small amount of fat through an interstice between these fibers. Further increases in pressure would force a larger amount through separating the surrounding fibers until a small hernia is produced. After a small opening is made the surrounding fibers are so well packed

*Read at a meeting of the Southeastern Division of the Association, Enterprise, July 6, 1933.

that a further increase in the size does not occur unless the fibers break. This does not often occur. The rings of the epigastric hernia usually remain one or two centimeters in diameter.

The early herniation is not due to a weakness of the individual fibers with rupture. It is rather due to the fact that the fibers are not bound together into one solid layer. The fascia can be likened to a wire screen. If a pencil is pushed through a mesh, a hole twice or thrice the size of the original can be easily made by separating the adjacent wires. However, after the hole has become several times wider it is enlarged further with difficulty. The wires are displaced until they are reinforced by the neighbor-

seen are those usually associated with diseases in the upper abdomen. I have recently seen a patient who had been treated six months for duodenal ulcer. He improved very nicely while in bed and carrying out a strict regimen of cream and alkaline powders. His pain disappeared and he gained several pounds. However, shortly after returning to his feet and again commencing the not over strenuous duties of a clerical

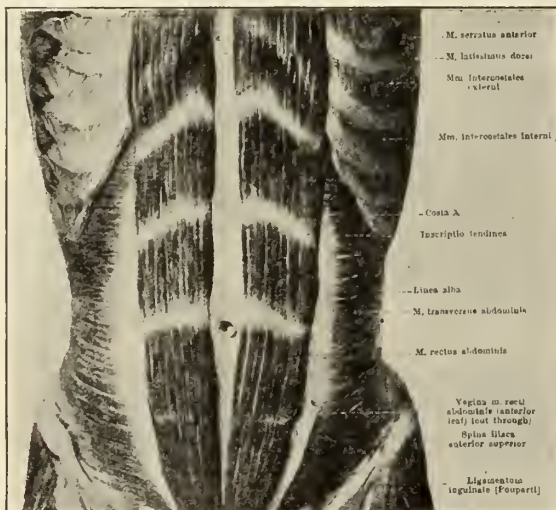


Figure 1. (Spalteholz) The relation of the recti muscles and the variation in the width of the linea alba.

ing ones. The same condition exists in the abdominal fascia and this explains why the epigastric hernia is rarely larger than the end of the little finger.

According to Watson, hernias in the linea alba constitute approximately one per cent of all hernias. He also estimates that they occur five times more frequently in the male than in the female.

Epigastric hernias produce symptoms in only about 25 per cent of patients and these are practically the only ones we ever see. The symptomless hernias are found during routine examinations when they are specifically looked for.

Epigastric hernia may produce many symptoms, but the ones most frequently

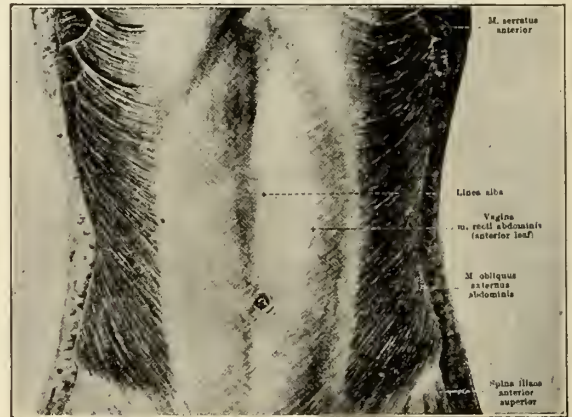


Figure 2. (Spalteholz) The origin and insertion of the external oblique muscle. Notice the crossing of the aponeurotic fibers particularly prominent in the middle line.

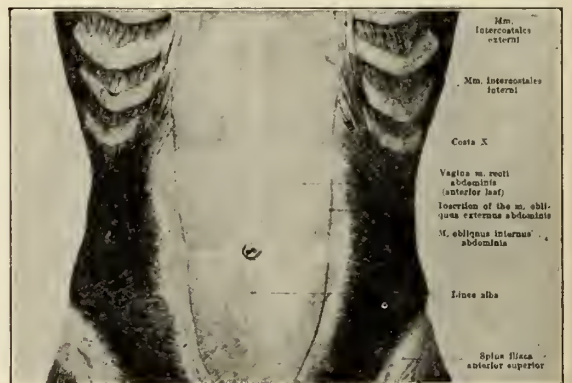


Figure 3. (Spalteholz) The internal oblique muscle. The fan shape is particularly pronounced in this muscle. The aponeurotic fibers are necessarily less compact in the middle line than nearer the sides.

position, he again lost ground. He regained his symptoms and lost weight. This occurred in spite of his adherence to a slightly modified regimen of the cream and powders. The symptoms he presented were very suggestive of duodenal ulcer but on examination a small epigastric hernia was

found. He was operated upon, the small opening closed and since that time he has been entirely well.

Most any diseases of the abdomen can be simulated by a hernia in the linea alba. All of the symptoms ascribed to diseases of the upper abdomen have been caused by epigastric hernia. Pain, both colicky and dragging or boring, may be constant or occur after eating and exercise. The pain has

Localised tenderness is probably the most important sign leading to a diagnosis. The diagnosis is established by the recognition of a small tumor in the middle line, or more often slightly to the right, which is tender to palpation and reducible. (Fig. 4). Often the hernia reduces itself when the patient assumes a supine position. For this reason the examination should always be made with the patient standing. Occasion-

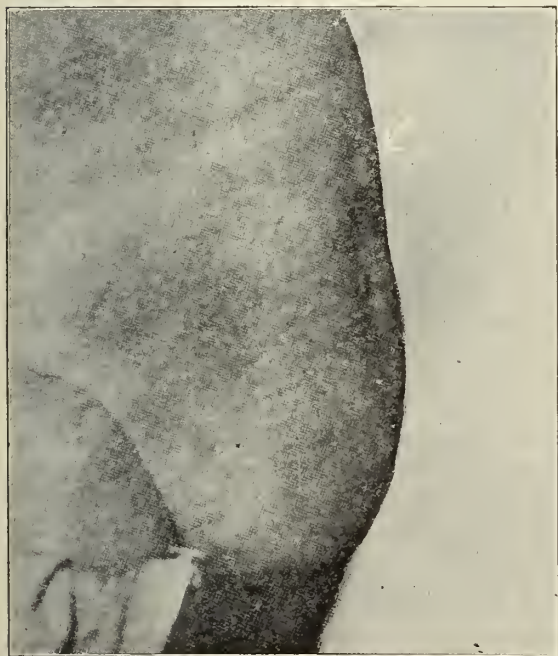


Figure 4. (Watson²) The size, shape and position of the majority of epigastric hernias. It is unusual for these hernias to be any more prominent than indicated by this picture.

been attributed to traction on the pro-peritoneal fat or round ligament. It has also been blamed on traction of the parietal peritoneum. It is often relieved by vomiting which empties the stomach and relieves the tension or gravity pull on the herniated structures. The pain is often relieved by lying on the back which also relieves the tension on the herniating structure. This possibly temporarily reduces the hernia.

The pain has also been attributed to pinching of one of the intercostal nerves as it passes through its enlarged opening in the linea alba. These intercostal nerves anastomose with the phrenics in the diaphragm. This would account for the referred pain to the back and shoulders which sometimes occurs.

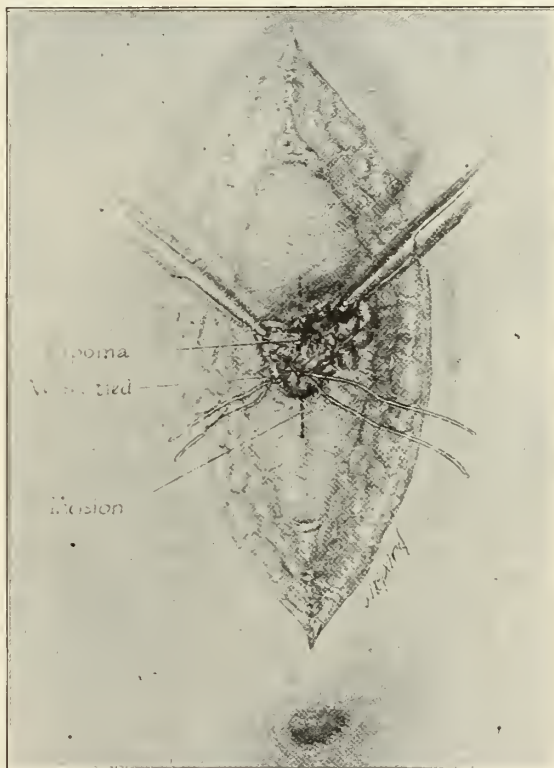


Figure 5. (Watson²) Treatment of epigastric hernia. The lipoma is seen emerging through the small ring in the linea alba. There is no sac. The dotted lines indicate the position for enlarging the ring.

ally the hernia is not reducible. According to Watson, in 25 per cent of the patients having symptoms there are demonstrable changes in the gastric contents and in the physical signs of the stomach itself. He says the most frequent of these symptoms are hyperacidity, lessened motility, gastrop-tosis and dilatation.

The treatment is simple. The symptom-less variety requires none. The painful hernia may be treated mechanically or by operation. Appliances are unsatisfactory because they usually increase the pain and fail to cure the condition. The operative

treatment is easy. An incision is made through the skin and fat exposing the fascia. The protruding mass of fat constituting the hernia is identified. The ring is enlarged by incising the fascia in the middle line above and below the ring (Fig 5). The protruding mass is examined for a sac. If one is found it is opened and its contents emptied back into the peritoneal cavity. If no sac is found, and this is usually the case, the fat is ligated high and the fascia closed with overlapping flaps. The skin is then closed in the customary manner.

The prognosis is excellent; recurrences are rare.

REFERENCES

1. Friedenwald, J., and Morrison, T. H.: Epigastric Hernia; Its Importance in Diagnosis of Gastro-Intestinal Disease, *J. A. M. A.*, 87:1466-1470, Oct. 30, '26.
2. Watson, L. F.: *Hernia*, 372, C. V. Mosby Co., St. Louis, 1924.
3. Watson, L. F.: Gastro-Intestinal Symptoms and Epigastric Hernia, *M. J. & Record* 119: 391-392, April 16, '24.
4. Tracy, J. L.: Diagnosis of Epigastric Hernia; Report of Case, *M. J. & Record* 127: 264-265, March 7, '28.
5. Eliason, E. L.: Duodenal Ulcer, Epigastric Hernia, Retroperitoneal Appendix, Adventitious Band, *S. Clinics, N. America* 3: 155-162, Feb. '23.
6. Bickham, Warren S.: *Operative Surgery*, Vol. 4, p. 143, W. B. Saunders Co., Philadelphia and London, 1924.

Contagion in Heart Disease—Considering heart disease therefore as composed of many forms of diseases of the heart we find that a large proportion of them are infectious in nature and that the infection was originally obtained through contact. Before the age of 45 years, by far the greater amount of cases of heart disease are infectious and acquired by contact. When we recall our original definition of contagion it becomes evident that the contagious nature of much of our diseased hearts must be given serious consideration. This point of view becomes much more prominent to the man who asks himself "What can be done to check the increasing death rate from heart disease?" As long as the diseases of the heart are seen only as complications of other diseases the conception of their etiology is fogged by the cloud of considerations given to the diseases of which they are a part.—*Terrell, New Orleans M. & S. J., December 1933.*

GONORRHEA IN THE FEMALE CHILD*

A REPORT OF 18 CASES

By
JARRATT P. ROBERTSON, M. D.
Birmingham, Alabama

There is probably no picture in medicine more pathetic than that presented by children innocently infected with gonorrhea. In the treatment of them one must be kind, gentle, and sympathetic. It is important that their confidence be gained and that care be exercised lest, by some thoughtless statement or act, they be led to believe they are a disgrace to society. It is felt that it is best not to attempt to explain to them the cause or method by which the infection was contracted. They are at an age when impressions made may be carried through life. If impressions lead to complexes, then the ordeal to which a child with gonorrhea is subjected is enough in itself to result in a multitude. In the treatment of them, one nurse that understands children is of far greater value to the doctor than a dozen of the superprofessional type. By tact the confidence of the patient is soon gained; the treatment then ceases to be an ordeal.

ETIOLOGY

The infection occurs most frequently in the lower strata of society where ignorance and poverty are rampant. Because of this, many of the cases are neglected for weeks and months before a physician is consulted.

In the South, where colored helpers are extensively used in the home and the majority of them are infected with gonorrhea, it is remarkable that the infection does not occur with greater frequency in private practice. The medical profession should constantly impress upon the public the importance of having servants examined not only for venereal diseases but for other contagious conditions. Servants should be instructed to wash their hands after using the toilet and before bathing a child intrusted to their care.

The age of our eighteen cases varied from fifteen months to eleven years; the average was six and one-tenth years. There were eleven white and seven colored patients. The predominance of the white patients is

*From the Department of Urology, Hillman Hospital, Birmingham.

interesting and not what one would expect to find in a charity clinic in a city where approximately forty per cent of the population is colored. Due to the lowered earning capacity of the colored race, the majority of them are dependent upon charity for treatment. Gonorrhea in the adult negro is usually the rule and not the exception; therefore, it would be logical to expect the reverse in the distribution given above. It is felt that the disease does occur with greater frequency in the colored race, but due to ignorance, neglect and absence of pain, a physician is not consulted in many instances.

In children the infection may occur at any age and be acquired innocently or by sexual contact. It is usually considered as having been innocently acquired through the medium of thermometers, bedpans, toilet seats, bath tubs, wash cloths, exchange of clothing, from the hands of infected nurses, or while playing with infected children.

This is one instance in which the often heard assertion, that the infection was contracted from a toilet seat, is probably correct. A small child, getting down from a high circular toilet, is compelled to rub her labia over the edge of the seat. Under these conditions, all that is needed for her to contract the disease is for some one to have deposited gonococci in a large drop of pus on the commode. All toilets, both public and private, should be equipped with U-shaped seats to prevent this from occurring.

While we did not obtain specific information that any of the cases had been acquired by sexual contact, the physical findings in certain of them lead us to believe that this may have been the method by which the infection was contracted. In two of our cases only tags of the hymen remained and the vagina would have easily admitted one finger. Another case, not included in this series, was referred to the clinic with a diagnosis of gonorrhea. Examination revealed no evidence of infection but showed a ruptured hymen that was oozing blood. The patient admitted having attempted sexual intercourse with an older boy. All these were below ten years of age.

There is a superstition among ignorant negroes to the effect that if one infected with gonorrhea has sexual contact, not necessarily intercourse, with a virgin, a cure

will result. This, no doubt, accounts for infection in certain rare instances.

While gonorrhea does not occur frequently in premature males, they are not immune to the condition. On their first visit one is usually unable to obtain any information in regard to the manner in which the infection was contracted. At later visits, with confidence gained, the majority of the small number we have treated confessed to their sins, some even relating with pride their sexual conquests. In an article dealing with gonorrhea in male children, Beilin¹ reports 91 cases, in 33 of which there was definite history of sexual intercourse.

Some authors feel that female children acquire the disease from infected adults usually. In one of our cases the mother and father were both infected; in five other cases there was a history of other members of the household being treated for a supposed specific infection. The majority of our cases were both ignorant and poor and we failed completely in an attempt to examine all contacts. We were often unable to impress upon the mother the importance of the examination and she, in turn, was unable at times to secure the cooperation of her own household. With reduction in incomes, additional members, and occasionally entire families, are crowded into the restricted space formerly occupied by one family. Mothers are required to leave their children with friends and at neighborhood houses while they go out to earn a living. Under these conditions it is often impossible to examine all contacts. A few mothers accepted our diagnosis reluctantly and it is doubtful if they yet believe their daughters were infected with gonorrhea. Had we had the services of trained social workers, no doubt we would have been able to determine the source of the infection in a greater percentage of cases.

PATHOLOGY

The shape of the genitalia of young girls probably accounts for the frequency with which they innocently contract the infection in comparison to adults and young boys. Their genitals present a greater unprotected area for infection. The suprapubic hair is lacking, the labia small and everted,

1. Beilin, L. M.: Gonorrheal Urethritis in Male Children, With Some Observations on Their Sexual Impulses, *J. Urol.* 25: 69-84, Jan. '31.

the urethral and vaginal orifices exposed, and the protective secretion from the vagina absent.

The condition is often incorrectly spoken of as a vulvovaginitis. This term is misleading and does not describe the pathology present. In this series only one patient developed a vulvitis and it subsided in twenty-four hours. We feel that it should be spoken of as gonorrhea in the female child. If a term is to be coined, that is descriptive of the pathology present in the majority of instances, it would be urethro-vagino-cervicitis. We found the cervix to be infected in every case and the vaginitis secondary to it. A urethritis was present in Cases 6, 9, 11, 12, 13, and 14 (Chart 1), or thirty-six per cent of the series.

The pathology is similar to that found in adult females except the pelvic organs and the Bartholin glands are seldom involved. Cases 4 and 5, eleven per cent of the series, presented evidence of a mild pelvic inflammatory condition at the initial examination. There was slight pain and tenderness in the extreme lower quadrants of the abdomen, with an elevation of temperature. The leukorrhea was not mentioned by the mother of Case 4, age 7, but was discovered during the examination. It had been present for two weeks but had not been taken seriously until pain developed in the lower abdomen. The mother then became alarmed, thinking it was appendicitis. In Case 5, age 4, the discharge had been present for four weeks. The mother's diagnosis was "pus tubes and the bad disease". None of the other cases developed evidence of a pelvic infection while under treatment. We did not encounter a single case of Bartholin gland or rectal infection.

Careful examination will reveal the character of the pathology present. We use a Young's straight endoscope No. 22 or 24F., as a vaginoscope. It is easily inserted without causing pain or injury to the hymen and through it an excellent view of the cervix and vagina is obtained. One is soon impressed with the fact that a definite cervicitis is present in the majority of instances; that it is the chief focus of infection; and that adequate treatment can only be administered by direct applications.

In our younger patients the cervix was often found to be an eroded mass that pro-

jected into the vagina. The canal could not be identified. In the older patients, the canal was dilated and filled with a plug of mucus. A small applicator could be introduced into it and a smear obtained directly from this point. The mucosa of the vagina usually shows evidence of a mild inflammatory reaction.

Urethral smears should always be taken. Before they are obtained, the urethra is milked by introducing a well lubricated swab into the vagina. It is used to milk the urethra as one uses the finger to milk the adult urethra. The infection, when present, occurs at the meatus and in Skene's glands.

A positive diagnosis is made by finding gram-negative intracellular diplococci in the smear. If the smears are obtained in the above way, many will be found positive that are negative if only a swab is introduced into the vagina and the smear taken from it. Four of our cases, 1, 7, 10 and 15, showed negative smears on initial examination. Case 7 was of six weeks and Case 15 of three months duration. Case 1 had been previously treated; the smears were positive before this treatment. Case 10 was of four months duration. When the endoscope was introduced, the vagina was found to contain a large amount of dirt and grit. Following its removal, the discharge soon disappeared. It is questionable here if we were dealing with a gonorrhea or if the discharge was due to the foreign material. It does not seem possible that it could have remained in the vagina for four months. We feel that the primary infection was probably gonorrhea, that other organisms had invaded its domain and forced it out, and that the dirt and grit were only a secondary finding.

This group of cases bears out the observations of other writers that it is difficult to obtain positive smears in untreated cases of long standing. Do they still harbor the gonococcus? Is the discharge due to a non-specific infection that has crowded out the gonococcus, or was the original infection due to some organism other than the gonococcus? These are questions that arise in treating this type of case. It would require a great deal of laboratory work to answer them. We consider the case as having been due to the gonococcus originally and treat until the discharge disappears, using all precautions as in gonorrhea.

SYMPTOMS

Unfortunately, pain is seldom one of the symptoms of this condition. If it were, we would probably see the cases at an earlier date. Of the eighteen cases, all but two sought treatment because of a persistent discharge. They were those previously mentioned as having developed symptoms of a mild salpingitis. Six of the cases gave a history of dysuria and frequency but this was brought out only on direct questioning. The urethral smears of five were positive while the sixth was negative. This case was not seen until the seventh week of her infection and had received some treatment. In Cases 6 and 14, there was evidence of a mild gonorrheal arthritis that had subsided. It was the persistent leukorrhea that brought these two cases to the clinic.

The duration of the discharge in this group of cases varied from two days to four months. The average was two and four-tenths weeks. The period of treatment will of necessity be long when the gonococcus is allowed weeks and months to hibernate in every crypt and pocket before steps to eradicate it are instituted.

DIAGNOSIS

The presence of a vaginal discharge is proof of some inflammatory process involving the vagina or cervix, but does not in itself warrant a diagnosis of gonorrhea any more than does the presence of leukorrhea in an adult. A positive diagnosis should only be made when gram-negative intracellular diplococci can be demonstrated in the smear. In the collection of the smears it is important that proper technique be followed, lest positive cases be overlooked. The smears should always be obtained directly from the urethra and cervix. In questionable cases, cultures and a complement fixation test may be required to make a positive diagnosis.

TREATMENT

The treatment of gonorrhea in a female child is often long and tedious. Nature gives such one a few advantages that are denied older sisters. Chief among these are absence of sexual excitement, pregnancy, and menstruation. Furthermore, adequate rest, sleep, and avoidance of alcoholic indulgence are assured. Pelvic, rectal, and Bartholin gland infection need be giv-

en but slight concern because of infrequent occurrence.

There are numerous methods of treating the infection and that fact in itself indicates that none of them is entirely satisfactory. As in other branches of medicine, one should follow the type of treatment that gives best results in his hands. It is questionable how any definite improvement can be attributed to treatment that consists only of baths and irrigations of the external genitalia, unless one is willing to grant that the life of the disease is short, its extension self-limited, and an auto cure a possibility. As a definite cervicitis is present, douches will cause but little, if any, more improvement than one would expect in infected adults. With the use of a douche there is the constant danger of an infected rectum from the solution flowing over it. To secure a satisfactory result the foci of infection must be eradicated. The medication must be applied directly to the infected area if a permanent and early cure is to result.

The equipment needed is neither elaborate nor complicated. The patient is placed on the table in the dorsal position. The labiae are cleansed with boric acid solution and a Young's straight endoscope, small enough to pass without pain, is introduced into the vagina. A smear is obtained from this locality. The cervix is now engaged in the tip of the endoscope and another smear obtained directly from the canal. The canal, cervix, and vagina are painted with a five per cent solution of mercurochrome. The urethra is milked and a third smear obtained. Following this a No. 8 or 10F. soft rubber catheter is passed into the bladder and a few cubic centimeters of a $\frac{1}{4}$ or $\frac{1}{2}$ per cent solution of protargol are instilled, the urethra being filled as the catheter is withdrawn. A short No. 10 or 12F. catheter is introduced into the vagina and four cubic centimeters of a two per cent mercurochrome jelly injected into it. The mercurochrome is incorporated in a stiff lubricating jelly as a base. Following the treatment, a pad is applied to protect the patient's clothing. The mother is taught to fill the vagina with the same jelly night and morning. She may use a syringe and catheter or a pile tip attached to the tube of jelly. The tip or syringe and catheter should be sterilized before each treatment.

The patient is given four treatments per week during the acute stage. Smears are taken at weekly intervals. When they become negative and the discharge assumes a mucus-like character we discontinue the use of the mercurochrome and use instead a silver nitrate solution. The silver nitrate applications are begun with a two per cent solution and slowly increased until a ten per cent strength is reached. At this time the pathology will be found to consist of a chronic cervicitis. As the discharge decreases the number of applications per week are decreased. There will be an increase in the discharge for about twenty-four hours following the use of strong silver nitrate solutions. During this time the mother continues the use of mercurochrome jelly night and morning. When the cervical and urethral smears have been negative for four weeks or longer and the discharge has disappeared, the mother discontinues the use of the mercurochrome jelly. The patient now returns once a week for an examination and smears. When we have obtained four negative smears in this way the patient is discharged with instructions to be returned at once should the slightest evidence of a discharge be noted.

Eight of our cases received gonorrheal vaccine in addition to the above treatment. The initial dose was $1/20$ cc. It was given at five-day intervals and the dose doubled each time until $3/4$ cc. was reached. The dose was then $3/4$ cc. every five days. We were unable to observe the slightest benefit from its use. The case that did not receive it improved just as rapidly as those that did. The only thing we accomplished with its use was to make the treatment an ordeal for both the mother and the patient. It is only mentioned to condemn its use.

Of the eighteen cases treated, five (Cases 1, 4, 5, 7 and 8) have been discharged as cured. None of them has returned with any evidence of a recurrence of the infection. The longest period of treatment in this series of cases was eighteen weeks, the shortest ten weeks, and the average was twelve and three-fifths weeks. The majority of the patients were very irregular in attendance. They were expected to receive four treatments per week—252 treatments for the above mentioned cases. They actually received 152 treatments or two and seven-tenths treatments per week. Case

5 was absent at one time for four weeks without treatment. Upon her return it was impossible to tell that she had ever been treated.

Case 12 is under observation at the present time and all indications are that she is cured.

Seven of our cases (2, 3, 6, 9, 10, 15 and 16) discontinued treatment against our advice. Case 2 had completed her active treatment and is probably cured but did not return for four check-up examinations. Cases 3, 15 and 16 each received one week's treatment only. Case 15 was of three months duration and the smears were negative. The smears were positive in Cases 3 and 16 at the time they discontinued treatment. These three cases are included to complete the series. Case 6 received six weeks of irregular treatment and all smears were negative when the treatment was discontinued. This case cannot in any sense be considered as being cured. Case 9 moved from the city following four weeks of active treatment. The smears were negative at this time and she could be classified only as being improved. Case 10 was of sixteen weeks duration and at the initial examination the smears were negative and have remained so. This is the case previously mentioned whose vagina contained dirt and grit. She only received four treatments in three weeks time. At the last treatment the discharge had disappeared. It remains to be decided if the discharge was from the dirt or if she had gonorrhea originally.

Cases 11, 13, 14, 17 and 18 are under active treatment at the present time. Case 11 was negative for several weeks but showed one positive smear from the cervix. The next week the smears from the cervix and urethra were both negative. Case 17 is the only one of this group that has a positive smear at the present time.

When one attempts to estimate the length of time required to cure a patient, many things enter that make our statistics unreliable. Chief among these was the poor cooperation we received on the part of the family in bringing the patients for treatment, as well as the length of time that was allowed to elapse before treatment was instituted. We feel that with early cases and proper cooperation a cure can be secured in from six to ten weeks time, followed by an observation period of four weeks.

SUMMARY OF CASES

(Chart 1)

Number	Age	Color	Duration of Symptoms Before Treatment	Number of Weeks Before Negative Smear	Vaccine	Duration of Treatment	Complications and Disposition of Case
1 526	3	White	2 months	All smears negative. Previously treated.	No	10 weeks, 37 treatments.	No complications. Discharged as cured.
2 984	3	White	2 weeks	Positive for 5 weeks. Negative 1 week. Positive 1 week. Negative after this date.	Yes	19 weeks, 52 treatments.	No complications. Failure to return for final examination.
3 1654	10	White	1 week	All smears positive.	No	1 week, 3 treatments.	Discontinued treatment.
4 3155	7	White	2 weeks	Positive for 1 month. Negative for 3 weeks. Positive for 1 week. Negative after this date.	Yes	12 weeks, 34 treatments.	Evidence of salpingitis at initial examination. Temp. 101°. Very irregular in coming for treatment. Discharged as cured.
5 4063	4	Colored	4 weeks	1 week	Yes	18 weeks, 24 treatments. Absent 4 weeks at one time without treatment.	Evidence of salpingitis at initial examination. Temperature elevated. Discharged as cured.
6 4366	4	Colored	1 week	4 weeks	Yes	6 weeks, 15 treatments.	Arthritis right knee. Urethritis. Discontinued treatment.
7 5155	11	White	6 weeks	All smears negative from first examination.	Yes	12 weeks, 24 treatments.	Discharged as cured.
8 5227	6	White	3 days	3 weeks	Yes	11 weeks, 33 treatments.	Discharged as cured.
9 6883	7	White	2 weeks	2 weeks	Yes	4 weeks, 16 treatments.	Urethritis. Moved out of city.
10 7708	7	Colored	16 weeks	All smears negative from first examination	No	3 weeks, 4 treatments.	Dirt and grit in vagina. Discontinued treatment.
11 8375	11	White	1 week	Negative, end second week. Positive, end 8th week. Negative after	Yes	11 weeks, 22 treatments.	Urethritis. Now under treatment.
12 9239	11	White	1 week	2 weeks	No	8 weeks, 27 treatments.	Urethritis. Under observation.
13 10071	5	Colored	2 weeks	2 weeks	No	8 weeks, 13 treatments.	Urethritis. Poor cooperation. Under treatment.
14 10186	5	White	7 weeks	2 weeks	No	3 weeks, 10 treatments.	Arthritis and Urethritis. Patient was in hospital for 35 days for treatment of arthritis. Treatment consisted of irrigations of labia and baths. At present there is slight swelling of left wrist, right ring finger, and right ankle. Temperature on admission to hospital was 101°, from 101° to 103° for the next 15 days. It then slowly decreased for the next 18 days and was normal for 2 days before leaving the hospital. Now under treatment.
15 10453	6	White	12 weeks	All smears negative from first examination.	No	1 week, 3 treatments.	Discontinued treatment.
16 10943	3	Colored	3 weeks	All smears positive.	No	1 week, 2 treatments.	Discontinued treatment.
17 12979	15	Colored	2 days	3 weeks	No	3 weeks, 10 treatments.	Under treatment.
18 12292	7	Colored	4 weeks	1 week	No	2 weeks, 5 treatments.	Under treatment.

We do not advocate hospitalization or segregation of these cases. If proper precautions are taken at home, there is little danger to other members of the family. The treatment can be given just as satisfactorily and a cure secured as easily at home as in an institution, and there need be little interruption in the child's normal routine of life. They should be kept at home during the acute stage of the disease and not allowed, during this time, to attend school or use the toilet used by other children. During the chronic stage, if active treatment is being given, it would be almost impossible to spread the disease except by sexual contact. In this group of cases there were from one to several female children in the majority of the families. We did not have a single instance of a second number of the family or a playmate contracting the disease. Bedpans, thermometers, etc., probably account for its rapid spread in hospitals.

PROGNOSIS

The prognosis is good with proper cooperation of the family. These patients can be cured just as readily as adults. Parker Dooley², in a review of a series of cases in adult life treated for gonorrhea in childhood, found the sequelae to be few and of minor importance. Their menstrual periods and pregnancies were within normal limits.

CONCLUSIONS

The infection occurs most frequently where ignorance and poverty are the rule and not the exception.

Female children may be infected at any age. The average age of our eighteen cases was six and one-tenth years.

In female children the disease is usually contracted from infected adults. Sexual relations may be the method by which the disease is spread in certain instances. The shape of the genitalia probably accounts for the frequency with which young girls contract the disease.

The term vulvovaginitis is misleading and does not describe the pathology present. A cervicitis is always present and the vaginitis is secondary to it. A urethritis occurs frequently and a vulvitis seldom.

2. Dooley, P.: Gonorrheal Vulvovaginitis; Possible Sequelae in Adult Life, *Am. J. Dis. Child.* 42: 1086-1089, Nov. '31.

Satisfactory examinations and treatments cannot be accomplished without the use of a vaginoscope. A Young's straight endoscope makes a very satisfactory vaginoscope.

An early and satisfactory cure can be secured only when the medication is applied directly to the infected areas. These cases can be cured and the prognosis is good.

511 Medical Arts Building.

HORMONE TEST FOR PREGNANCY*

By

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The need for a pregnancy test was recognized even by the early Egyptians and it is said that in questionable cases the following was advised: "A woman may determine if she is pregnant by taking some earth and barley in a vessel and adding to it a little of her urine day by day. Should the barley grow the woman is pregnant, but if the grain does not grow, then she will not bear a child."

Since that time many attempts at perfecting a test have been made but nothing of value was accomplished until recently.

The value of a reliable test for pregnancy can be readily seen. A diagnosis of pregnancy from a history and physical findings is usually not difficult, but now and then the differentiation between pregnancy and some pelvic tumor may tax to the utmost the diagnostic skill of the best gynecologist. Lynch in his monograph on pelvic neoplasms says: "Uterine pregnancy advanced as far as the fifth (5th) month may offer the greatest difficulty in differential diagnosis. Cases are frequently operated on as tumors and the true diagnosis obtained only when the abdomen is opened. Occasionally, even when the abdomen is open, one may be most uncertain as to the nature of the growth, especially when it has to be differentiated from a two or three month pregnancy. There is no surgeon of experience who has not had cases which proved to be most confusing."

The modern tests for pregnancy are based on the fact that large quantities of anterior pituitary hormone and ovarian

*Read at a meeting of the Northeastern Division of the Association, Talladega, July 11, 1933.

hormone are excreted in the urine of pregnant women.

It has been definitely established that the anterior lobe of the pituitary gland produces a hormone which completely controls the ovarian cycle. Smith, Redford and others have offered experimental proof that partial removal of the anterior lobe of this gland results in atrophy of the ovaries with a total suppression of sexual activities, and that the ovarian cycle and normal sexual function is re-established by grafting anterior lobe substance into these hypophysectomized animals.

It has also been shown by many investigators that the injection of anterior pituitary extract into sexually immature animals causes rapid development of the sexual organs. The ovaries develop mature graafian follicles, hemorrhagic cysts and corpora lutea.

The changes which occur in the uterus and vagina during the menstrual cycle are considered to be due to the action of an ovarian hormone which is secreted by the graafian follicles and corpora lutea. Allen has shown that in the stage of heat in the sexual cycle of the mouse, in addition to other changes, the epithelium of the vagina becomes much thickened and the superficial layers become cornified and are shed in large quantities and are easily seen microscopically in vaginal smears. They appear as large non-nucleated cells. Of course, in castrated mice the sexual cycle is stopped and this condition does not occur. Allen and Doisy were the first to apply the characteristic cyclic changes in the vaginal secretion of the rodent as a test for an ovarian hormone. As stated before, vaginal smears from castrated mice do not show large numbers of non-nucleated epithelial cells. If these mice are injected with ovarian hormone, in 72 hours the vaginal smear will be filled with these characteristic cells.

As stated above, large quantities of both anterior pituitary hormone and ovarian hormone are excreted in the urine of pregnant women, but except in pregnancy the quantity excreted is so small it cannot be detected by the ordinary test. Within the first week or so of pregnancy these hormones begin to appear in the urine. The quantity of pituitary sex hormone rapidly increases up to the fifth month, and then

diminishes fairly rapidly so that a few days after delivery none can be detected. Quite a contrast has been found in the rate of excretion of ovarian hormone during pregnancy. The height of excretion of this hormone is attained during the last month of pregnancy and at the termination of pregnancy it drops to a very low level, and soon disappears from the urine.

The ovarian hormone tests for pregnancy is made by injecting urine from the woman to be tested into castrated adult female mice. Vaginal smears from the mice are then examined microscopically for the characteristic non-nucleated epithelial cells. If these cells are found in large numbers, the reaction is indicative of pregnancy. This test has been used by a large number of observers and the average results are as follows: In pregnant women 75% gave correct positive reactions; in non-pregnant women 97.5% gave correct negative reactions.

The anterior pituitary hormone test for pregnancy is the one in most common use. It was first devised by Aschheim and Zondek, and since that time their method has been modified by several investigators, the most notable of which is Friedman. In the original Aschheim-Zondek test immature mice, three to four weeks old, are employed. Urine from the woman to be tested is injected into five mice and from the third to fourth day after injection their ovaries are examined for the presence of graafian follicles containing blood, which are easily seen with the naked eye, or corpora lutea which may be seen with the aid of a hand lens.

In Friedman's modifications of this test, rabbits are used instead of mice, thus simplifying the test in several ways. To have available five mice from three to four weeks old at any time a test may be necessary would require the keeping of a very large colony of mice. Rabbits can usually be easily procured in any community. This modification requires much less time than the original. It can be completed in from 24 to 48 hours.

Adult female rabbits about 4 months of age are used. They should be kept in isolation for three weeks because copulation or even attempts at copulation between female rabbits often results in changes in the ovaries, which may be misleading.

Urine is collected from the woman to be tested when she first awakens in the morning. She should be instructed to take very little fluid the night before, so that the urine will be fairly concentrated. If not used at once it should be kept in a refrigerator. 10 to 15 cubic centimeters are injected into one of the veins of a rabbit's ear. After 24 to 48 hours the rabbit's ovaries are examined for graafian follicles and hemorrhagic cysts. These cysts are very definite and if present cannot be overlooked. They have the appearance of large black-headed pins.

My associates and I have made this test twenty times. Ten were positive, and seven negative, and three rabbits died. The final outcome of the cases proved that the results of the tests were correct. We were able to find the characteristic hemorrhagic graafian follicles as early as eighteen hours after injecting 10 cc. of urine from a pregnant woman. At first we had considerable difficulty injecting the urine into the ear veins. Usually after entering the vein with a small needle and injecting a few drops of urine, the rabbit would jump and dislodge the needle from the vein. We then resorted to general anesthesia which was fairly satisfactory. We finally found that by placing the rabbit in a box and drawing its ear through a narrow slit it could be injected without difficulty.

One rabbit may be used for several tests by inspecting the ovaries through an incision, and letting the rabbit live. The incision most highly recommended is through the back just lateral to the lumbar muscles. We have used this method satisfactorily in one case. From a review of the literature it appears that the rabbit test is about 96% accurate. It is considered the most reliable of the tests for pregnancy. Since this test requires little technical skill, is the most reliable and the rabbit is almost always available, it has become the most popular test.

It has been shown that positive reactions are occasionally obtained in women entering the menopause, in those suffering from primary ovarian failure and in patients with large ovarian cysts or hyperthyroidism. So we see that while the hormone tests for pregnancy are of great value, they are not faultless and must be considered only as aids to diagnosis, as is true of most other laboratory procedures.

SUMMARY

1. Anterior pituitary hormone causes characteristic changes in the ovaries of mice and rabbits, and ovarian hormone causes characteristic changes in the vaginal mucous membrane and vaginal secretions of mice.
2. Large quantities of anterior pituitary hormone and ovarian hormone are found in the urine of pregnant women.
3. Based on the above facts two important tests for pregnancy have been devised: one the ovarian hormone test, the other the anterior pituitary hormone test, in which urine from the woman to be tested is injected into mice or rabbits.
4. On account of its simplicity the rabbit anterior pituitary hormone test is in most common use.
5. This test is about 96% accurate.

UNUNITED FRACTURE OF THE NECK OF THE FEMUR*

By
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With some hesitation and an apology, I come to you with what might seem an uninteresting subject; but, in that no similar paper has been presented to this Association and my series compares very favorably with workers in other cities, I hope to make the paper an interesting one.

Non-union of the neck of the femur is due (1) to lack of immediate and proper reduction or an unsatisfactory reduction; and (2) if reduced satisfactorily, the fracture is often not adequately immobilized and not for a sufficient time. (3) There is also that group of cases in which though reduction has been satisfactory and immobilization adequate, a slow but definite absorption of the neck of the femur takes place. This is due to circulation disturbances. In some instances the entire neck undergoes absorption.

There is a possible tendency to treat fractures of the neck of the femur in a careless way, this being especially true in a patient past sixty years of age. In this patient we are more concerned with the general health

*Read to the Association in annual session, Montgomery, April 20, 1933.

of the patient than with the reduction of the fracture.

The disability in an ununited fracture of the neck of the femur is considerable, in most instances making an invalid of the patient. Pain is present in practically every case and is continuous on motion and weight bearing. There is always shortening, the leg is adducted and motions are greatly impaired. Voluntary weight cannot be comfortably placed on the limb.

A word about the handling of an acute neck fracture is, I believe, indicated in discussing this type of disability. I prefer the Whitman method in acute fracture of the neck of the femur as no other so completely immobilizes, unless it is the well leg traction splint devised by Roger-Anderson. It is best to try to prevent a non-union than to correct one.

The massive bone graft, or osteoperiosteal graft, has to a great degree solved the problem in non-union of the long bones, but this is not true in non-union of the neck of the femur. Not until Royal Whitman devised the reconstruction operation had there been a sound, satisfactory procedure to approach this disabling condition. The technique* of the reconstruction operation is as follows: "The Smith-Peterson or the lateral U-shaped incision gives sufficient room to expose the hip joint capsule. The capsule is opened and the head of the femur is removed from the acetabulum.

"The trochanter of the femur is then cut off generously from the shaft by means of a chisel through a plane cut at the base parallel to the axis of the neck of the femur. All muscles attached to the trochanter are thus freed with their insertions intact in this bone fragment; they can then be retracted upward. The end of the neck fragment is slightly pointed and rounded and is pushed up into the acetabulum while the leg is held in abduction and slight internal rotation. Usually this abduction is 25 or 30 degrees. The lateral surface of the shaft of the femur is then freshened to meet the surface of the pulled down trochanter which is stitched into apposition. The wound is closed and a plaster of Paris spica, nipple to toes, is applied. This remains four to six weeks, when a short spica to

the knee is applied and the patient is allowed up on crutches to encourage a remodeling of the hip joint and femoral head in response to functional requirements. When weight-bearing becomes painless and x-ray shows the newly forming upper end of the neck in proper position, the spica is removed and weight-bearing on a walking caliper along with massage and active movements is encouraged.

"Value of reconstruction operation: It offers better functional results and a higher percentage of successful results than the insertion of a bone peg, or any kind of a peg, through the neck of the femur into the head. Bone pegging is liable to fool the surgeon and he may permit his patient to bear weight before the tissues of the neck have healed. Then occurs fracture or absorption of the bone peg with the old displacement at the neck of the femur. Pain, shortening, and loss of function may occur sometimes many months after the result has been considered satisfactory."

I have operated on thirteen hips for non-union, and results have been as follows:

- (1) One, not improved, except for being free of pain.
- (2) Two died, one with suppression of urine, the other with pneumonia.
- (3) One died within four months, from complication, not attributable to the hip.
- (4) One died within 18 months, due to apoplexy, but was comfortable and suffered no disability as concerned the hip.
- (5) The three that died expressed a feeling to die on operating table rather than continue an invalid.
- (6) The results in the other ten cases have been encouraging and satisfactory. The function of the hip is satisfactory; stability is sufficient for weight-bearing. Relief of pain resulted in all patients.

Iris-Inclusion Operations in Glaucoma—There are two reasons why iris-inclusion operations have not gained more general acceptance. The first is that we have been taught that an iris tag included in the wound by accident is a potential cause of secondary glaucoma. The second is the fear of sympathetic ophthalmia. These are both theoretical rather than practical objections and not based upon facts.—*Griffey & Goar, Texas State J. Med., November 1933.*

*From Kellog Speed's book, "Fractures and Dislocations".

THE CHANGING ORDER*

By

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Dadeville, Alabama

No claims are made that a paper with the above caption would be of interest to the medical profession, or that it has any remote relationship to a scientific effort. No claim is made that it has any value from a practical standpoint, or that it would even be readable to such a discriminating group of men as are gathered here this evening. I claim for it no merit, nor offer any apology for its presentation. Any observant mind will agree that we are in the midst of change on every hand; changes of a nature never before witnessed in the history of the world. Political theories and dogmas are veering with every wind of opinion and being thrown into the discard almost overnight. Economic conditions are out of joint and business is walking the "rough and thorny road" with fear and trembling. The industrial life of the whole world is in a state of turmoil and the end is not yet.

Statesmen are bewildered, business men are groping in the dark, industrial leaders are wondering which way to turn, and the common man in the street is facing the future in perplexity and doubt. In all this atmosphere of uncertainty the medical profession cannot hope to come through unscathed, nor expect to face the morrow and its waiting problems without itself having experienced change and readjustments.

True it is that science—its truths and its exactness—will not change, but in its applications to human needs it will change. True it is that medical ethics as we know them, founded upon truth and the practice of the golden rule, will not change, but a new interpretation of ethics as applied to human needs will daily confront us. There still will be the same call of human need to be served in the profession of tomorrow as has been in the past. Many have thought that in this changing order we would come to see the passing of the old family physician as we have known him, celebrated in song and story, and beloved by legions of those to whom he had ministered in their hour of distress and greatest need, and in

his place would come the specialist with his up-to-date equipment and his available hospital facilities. But will that be true? However desirable it might be to have the advantages of all that is implied in the suggestion that one go to the specialist and to the hospital when sickness comes with all the distress and anxiety and physical suffering which follows in its train, the truth of the business is that it will still be beyond the reach of most people to attain. Far be it from me to decry the efficient specialist and the advantages of his invaluable aid and counsel. But the very fact that he is a specialist at once puts a higher value upon his services and a greater strain upon the pocketbook of the average man.

Who is it that constitutes the connecting link between the average family and the specialist? Who is it that is called upon to answer the first call of distress, to render first aid in case of injury, to treat Mary or Johnnie, or the mother, or the "old man" for any or all the ailments to which human flesh is heir, from earache or stumped toe, on through the hysterical spells of the grown-up daughter, or the overworked mother, to the graver and more serious diseases which involve life itself? Who is it that must possess sufficient discrimination and discernment, sufficient knowledge of disease, and sufficient supply of that fine quality of the human mind which we designate as "common sense" to be able to hold human life in his hand, as it were, and determine which patient will do best at home, which needs the services of the specialist, and which needs hospitalization? Surely no one can do this, no one must do this but the one to whom the family has learned to turn in every emergency and in every hour of sickness—the family physician. Wrapped round with a halo of reverence and glory coming down through the centuries from remotest antiquity, this man, this family physician, is today and will be tomorrow and on through the changing years the one first thought of when men languish upon beds of pain and are in the grip of disease, and when they are coming down to that river from the opposite shore of which no mariner ever returns. If the family physician survives this changing order—and he will survive—what then will be his status in the new day? He still will be the counselor and confidant of the family. He still

*Read at the annual joint meeting of the Elmore and Tallapoosa County Medical Societies, Hotel Camp Dixie, Lake Martin, July 11, 1933.

will respond to innumerable calls of distress in every city, town, hamlet and countryside throughout the land. He still will be the contact man between the specialist and the hospital on the one hand and the sick and suffering on the other. But he will be more than this: he will come to be a specialist in his own line, the super-specialist, if you please. Because of his knowledge of the practical side of medicine, because of his intimate knowledge of human nature, and his intimate acquaintanceship with his clientele, his knowledge of their weaknesses, their family idiosyncrasies, their hereditary tendencies, he it is that must determine the time during the progress of a given case when the specialist should be called, or hospitalization be made available, or both. His conduct of a case must be so in keeping with up-to-date medicine, so conscious of all that is involved in the case, so practical and sympathetic, and so prompt and unhesitating as to win the complete confidence of the patient, and inspire respect for his opinions in the mind of the specialist whose services and counsel he may need and seek in the progress of the case. Who shall say that the man who measures up to these requirements is not the greatest specialist of them all? Yes, the family physician will survive, but what of the practical side of his life's work? Here the biblical saying that "the laborer is worthy of his hire" should prevail. The average doctor during these past three years has been called on to bear more than his part of the load. And it is to the everlasting glory of the profession that he has bent his back to the burden without a murmur. Poorly paid, overworked, discouraged and maybe embarrassed by financial obligations which he cannot meet, yet, he has served the public, answered the innumerable calls of charity, and carried on when the hope of financial reward was remote or altogether lacking.

What will be the outcome of the present situation? Will the general practitioner, becoming more and more burdened with this already too heavy load of charity and calls upon his time and for his services for which there is no promise or hope of reward for him, be inclined to refer more and more of his patients to the specialist with the hope that in some way he may be rid of them, and the heavy burden of charity

be shifted to other shoulders? It is a known fact that the average man can raise a few dollars (or his friends can for him) to go himself, or to send some member of his family to a specialist and a hospital; whereas, the same man, if kept at home under the observation and care of his family physician, would not make an effort, nor his friends for him, to raise a tinker's dime to pay the family physician. The same gentle Teacher who said "the poor ye have with you always", and "whensoever ye will ye can do them good" could also have said "the dead-beat also cumbereth the land, and whensoever he hath a chance he proceedeth to skin you". The family physician, while recognizing that a certain amount of charity will always be expected of him (and to his credit he has always done it cheerfully), has been too long-suffering and indulgent toward this latter class. Likewise, the specialist has always gladly answered the call of deserving charity, yet he too is coming to feel the imposition of the dead-beat. It will take cooperation between every group, the family physician, the specialist, the hospital, and those doing group practice, to uproot this evil, and to separate real charity practice from that that should be required to pay. And this brings us to say that ability to pay differs with each individual. I venture to predict that the medical fee in the future will come more and more to be based upon a man's ability to pay rather than a fixed fee charged to every one alike. Why should Mr. A., who may be worth a million dollars, be charged only three dollars for a professional call when the same charges will be rendered Mr. B., who works for Mr. A. at fifty dollars per month? Here is an inequality that should be corrected. Who will say that a call to Mr. A. under the circumstances is not worth much more to him than a like call to Mr. B.?

The solution here would seem to be that every physician should have a minimum fee for all pay patients, and this minimum should rise to a higher and still higher level in proportion to the client's ability to pay.

So much for the pay patients. But what of that very large and ever increasing number of charity cases which the stress of the times has multiplied 2, 3, or 4-fold? Are they not entitled to relief? For the pro-

fession to continue to carry this heavy and almost intolerable burden, it would seem, is asking too much of an already overloaded group. What then? Shall industry organize to care for the health of those who cannot care for themselves, along with those who toil? Or shall a better organized charity take up the burden? Or shall we get a step nearer to that "boogie" we have heard so much about—State medicine?

It is the opinion of the writer that industry will be forced to organize for the better medical care of the workers of the country, together with the enormous number of non-workers and the ever increasing army of charity cases which are a part of the toiling masses. How it will be done I do not pretend to know. Whether it means an increase in contract practice I do not undertake to say. Whether it will take the form of group medical and health insurance or a haphazard assessment by industry against the workers, part going for medical care of the sick and the remainder into the coffers of industry itself, I do not know. But I believe that through a sympathetic approach by industry on the one hand and the medical profession on the other to a state of affairs that cries to high heaven for solution a proper solution can be found. The continual mounting of the cost of medical care to the average man and the inability to secure it at all on the part of an ever increasing number makes a solution imperative.

If industry cannot bring a solution that will care for the indigent along with the toiling masses from which group most indigents come, then I do not believe it possible for organized charity to bring a solution. What then? Shall the State step in and care for those who are not able to care for themselves? The organized profession in this State has heretofore frowned on every move that seems to suggest so-called State medicine. They have been for the open door as it were, free and fair competition, the right for one to choose his doctor, the privilege of advancement on the part of that member of the profession who is most energetic, most able, and most conscientious.

We have held to the idea that the State should confine its activities (and rightly so I think) to that field of medicine which we call public health—the control of communicable diseases and the elimination of the

causes of other diseases, infectious in nature and yet, strictly speaking, not communicable; for example, puerperal infection. The medical profession, to whose hands has been committed the public health work of the State, has been its defenders and supporter, and has built up here in Alabama a system which is both the pride of the State and the admiration of public health workers throughout the world. Unfortunately at this time the State Health Department, because of financial conditions, is laboring under a very serious handicap. It seems unthinkable, however, that this state of affairs will be allowed to continue for long, or that the activities of the State Health Department will be materially curtailed or permanently crippled.

But these activities will be directed in the future as in the past toward the prevention and control of disease, not in the treatment of disease.

Dr. James S. Thomas, long an employee of the Alabama Power Company, in returning after 20 years to the teaching profession, made a farewell address at a meeting in Birmingham, and among the things he said were these words: "The problems of the future will grow out of the present tendency to substitute the institution for the man. I have examined some 15 to 18 of the outstanding experiments throughout the world, attempts to substitute the institution for the man, and I can defend with success on any platform in America the thesis that in every case civilization has continued to grow only so long as the institution has been subordinated to the man. Our problem then is to return to that fine individualism in which man is paramount to the institution."

The above quotation would seem to apply very aptly when we discuss the question of so-called State medicine. There are certain functions, however, which the State could with consistency and without infringement upon the individual rights of the private physician continue to perform. Among these might be mentioned the manufacture of typhoid and paratyphoid vaccine, diphtheria toxoid and rabies vaccine. It should continue to supply, by special arrangement with certain manufacturers, diphtheria antitoxin for indigent patients and compensate private physicians for the administration of rabies vaccine to the

poor. I do not believe the time will come, however, when the State will levy and collect a tax for the specific purpose of rendering medical services of every kind to the indigent. However fine and altruistic such a theory might appear to many people, to put such a theory into practice would open up avenues which would lead us far afield from the tried and true methods which have sufficed for care of the sick and suffering through the centuries. That the State will continue to give medical care to prisoners and the inmates of almshouses cannot be questioned. Another thing the State might do with perfect propriety and without violation of any law of ethics would be to provide suitable sanatoria for the care of indigent and semi-indigent tuberculous patients. We once had a law on the statute books in this State which permitted this to be done, but for lack of money nothing ever came of it. To my mind the State must in time make some such provision if we are ever to make very much progress in the solution of the problem of tuberculosis.

Three things are fundamental and necessary if we are ever to whip the great white plague:

- 1st. Early diagnosis
- 2nd. Early isolation of the patient
- 3rd. Early and prolonged provision for complete rest for the patient.

The medical profession must supply the first essential. The State could and should supply the last two essentials, especially for the large number of indigents and semi-indigents who because of lack of food and housing and proper environment are particularly susceptible to the ravages of tuberculosis. For the State to supply these two last named essentials, a system of hospitalization would be absolutely essential and necessary. If the State as an institution should ever reach that point in its history where such a provision could with promise of success be undertaken, I believe it would have the whole-hearted and unanimous support of the medical profession.

So with the State confining its activities to public health—the control and prevention of communicable disease, the distribution of biologic agents, the medical care of the inmates of prisons and almshouses, and the establishment of county or district sanato-

ria for the control of indigent and semi-indigent cases of tuberculosis; with industry caring for the indigent and disabled workers by a system of health insurance or old age pensions; with cordial and hearty co-operation between the specialist on the one hand and the private practitioner on the other, it ought to be possible to supply all of our people with necessary medical care at reasonable cost.

I have left to be mentioned last the possibilities of satisfactory financial returns to the physicians themselves and satisfactory medical service at reasonable cost to the public, which lie in the field of organized group practice. I believe the future will see more and more of this type of medical service, and it holds out possibilities of mutual benefit to both the physician and the public.

I close this rambling paper with the final suggestion that the man of tomorrow will come to a greater appreciation of the value of health and its conservation and that the annual or semi-annual check-up on his health by his family physician will become the rule rather than remain the exception. I see nothing unethical in the doctor himself encouraging his clientele to adopt this as a fixed rule. I can see nothing but good in it for both the doctor and the people.

Tuberculosis Control—When the diagnosis of tuberculosis is made, one of the first questions asked is: What must I do to get well? Must I stay at home or leave? Should I go to a sanatorium? These questions should be answered with a great deal of care and many times it is impossible to answer them correctly. There is no doubt that patients who have been treated in a sanatorium are much easier handled when they return. Further, it is impossible to make a sanatorium out of a home. A patient in a sanatorium readily learns what is meant by the rest cure and how it is taken.

On the other hand there are patients who do not fit into sanatorium life and should not be sent there; others refuse to go and have to be treated at home. Frequently, a patient has to be sent away from home to get away from domestic or business worries or too much attention and advice from friends. Before advising a patient to go away, his financial condition must be seriously considered.—*Carman, Texas State J. Med., November 1933.*

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TOXICITY OF QUININE IN LABOR CASES

For decades it has been the custom among obstetricians to employ quinine either to induce labor or to stimulate weak labor pains. So routine has this procedure become that most physicians simply give the quinine, hope that it will expedite matters, and think no more about it.

King¹, of New Orleans, has recently called attention to the possibility of harmful effects of quinine on the fetus. He reviews the literature and reports three fetal deaths in which he holds that quinine alone was the causative agent.

Though quinine has long been credited with oxytocic properties, there seems to be some difference of opinion as to how effective it really is. Sollman² says that "clinically, quinine has little or no effects unless the pains have started. It is therefore ineffective for inducing premature labor". Dodek³ thinks that its value has been over-

estimated. Bourne and Burn⁴ studied labor pains by means of an intra-uterine bag connected to a recording apparatus. They concluded that quinine when given to a woman in labor "showed very little effect of a kind calculated to hasten delivery" and "that its action on the parturient human uterus has been much overstressed". De Lee⁵ holds that quinine should seldom be used in uterine atony because it often causes premature discharge of meconium and annoying postpartum oozing.

King says "the first instance of fetal death ascribed to administration of quinine to the mother in the induction of labor was reported by Gellhorn in 1927. His patient received two ounces of castor oil at 7 A. M. and 10 grains of quinine sulphate at 9 and 11 A. M. and 1 P. M. No labor pains developed. Toward evening all fetal movements ceased, and no fetal heart tones could be detected after this time. The usual signs and symptoms of fetal death manifested themselves. Fifteen days later. . . a macerated child was delivered. Examination of the placenta and autopsy of the child revealed nothing to account for the fetal death. The Wassermann reaction was negative and there was no evidence of fetal or maternal syphilis."

"Dilling and Gemmell⁶. . . reviewed 765 collected cases of medical induction and of the 46 stillbirths in this series they felt that eight. . . were probably due to the quinine. In these instances the heart tones ceased within thirty-six hours of the administration of the quinine, and before the onset of labor. In their second paper⁷ they analyzed twenty-six cases of fetal death following medical induction, including the use of quinine. In seven instances the only plausible explanation is that death was due to the quinine". In King's three cases the history was much the same as the above. Au-

4. Bourne, A. W., and Burn, J. H.: Action on the Human Uterus of Anesthetics and Other Drugs Commonly Used in Labor, Brit. M. J. 2: 87 (July 19) 1930.

5. De Lee, J. B.: Text-Book of Obstetrics, p. 620, W. B. Saunders Co., Philadelphia, 1932.

6. Dilling, W. J., and Gemmell, A. A.: A Preliminary Investigation of Fetal Deaths Following Quinine Induction, J. Obst. & Gynec. Brit. Emp. 36: 353 (Summer) 1929.

7. Dilling, W. J., and Gemmell, A. A.: Further Investigations of the Death of the Child Following Induction of Quinine, J. Obst. & Gynec. Brit. Emp. 37: 528 (Autumn) 1930.

1. King, E. L.: Does Quinine in the Induction of Labor Have a Deleterious Effect on the Fetus, J. A. M. A. 101: 15 (Oct. 7) 1933.

2. Sollman, Torald: Manual of Pharmacology, ed. 4, p. 595, W. B. Saunders Co., Philadelphia, 1932.

3. Dodek, S. M.: A New Method of Graphical-ly Recording the Contractions of the Parturient Human Uterus, Surg. Gynec. & Obst. 55: 45 (July) 1932.

topsy of one of the babies showed blood in both pleural sacs, the pericardium and peritoneum; also an acute nephritis. In another baby autopsy showed "no lesions except petechial hemorrhages in the brain, suggesting asphyxia". In a third child no anatomical lesions were found, but "qualitative chemical tests . . ., disclosed the presence of an appreciable amount of quinine in the brain tissue."

Every practitioner who engages in obstetrics must ponder the fact that so many normal, well-formed babies are stillborn, even though labor may not have been difficult. Can it be that the widespread and indiscriminate use of quinine is the cause of many of these prenatal fatalities?

Even though quinine is only one of many causes of stillbirth, the obstetrician will do well to heed the closing words of King: "It appears that one cannot ascribe to quinine a role of any particular importance in the induction of labor. It is certain that it has no such action when employed alone, and it is questionable whether it is of any value when used in conjunction with other drugs or procedures, as in Watson's and Slemmons' methods. In view of the reported fetal deaths, which can in all fairness be charged to the quinine used, it would seem to be wise to discontinue entirely the use of this drug in the induction of labor or at least to employ it in smaller doses. There seems to be little doubt that equally good results will be obtained without subjecting the child to the added risk of poisoning from the quinine employed." W. W.

Current Comment

REVIEW OF THE PROCEEDINGS OF THE CHILD HEALTH RECOVERY CONFERENCE, WASHINGTON, D. C., OCT. 6, 1933, WITH SUGGESTIONS AS TO HOW ALABAMA MAY PARTICIPATE

The conference opened with brief addresses by the Secretary of Labor, Frances Perkins, and Mrs. Franklin D. Roosevelt. Mrs. Roosevelt brought out the need of physical well-being to insure mental and moral health of the next generation.

As given in the report of the Executive Committee, the objectives of the program are:

1. The location of undernourished children.

2. The initiation and development of plans to measure, as far as possible, existing malnutrition and to prevent its further progress through dietary measures and, insofar as necessary, the institution of corrective medical procedures.

The report recommends the organization of state, county and local committees, representative of official and voluntary health, welfare and educational agencies.

The report further suggests (1) that consideration be given the needs of children in families on relief and those not on relief who are in need; (2) that all groups from infancy to adolescence be given consideration; (3) that the Children's Bureau furnish a physical examination form with interpretative information to insure a degree of uniformity in procedure; and (4) that provisions be made for the payment of a small fee for examinations and necessary correction of defects.

This report was approved at the close of the conference upon the following motion:

"That the Conference has received with great interest the report of the Executive Committee, and that it approves the report with the understanding that the States will take action to modify any suggestion in that report in accordance with their particular needs."

Mr. Harry L. Hopkins, Federal Relief Administrator, in his address, pointed out that there are 6,000,000 children in families receiving relief from federal funds. He stated that it was the intention of the Relief Administration that relief to families should be sufficient to provide adequate diets for children.

Speakers from Pennsylvania, New Jersey and New York outlined plans for carrying out the program of finding undernourished children through the cooperative efforts of county medical societies, health departments, parent-teacher groups, Federated Women's Clubs, American Legion, and other civic bodies. All these agencies would have to be brought into the campaign if all children undernourished are to be reached. It was pointed out that there is as much or even more malnutrition in the borderline cases, where the families are living on reduced budgets. The pivot around which the campaign might be developed is the health agencies already in the field, especially the official health departments.

While the conference was agreed on the wide extent of malnutrition, it was by no means unanimous as to whether there was an alarming increase in malnutrition now over that in the past. From the comments of the health officials present, the conclusion is drawn that their reaction was that there had not been an alarming increase, but rather that the conference called attention to and emphasized anew the seriousness of the problem of malnutrition that is facing health workers even in times of prosperity. The discussion also brought out that many states, largely agricultural, have been having a hard time for years, and while malnutrition had been recognized little had been done about it. Other speakers stressed the lack of any scientific definition of malnutrition and urged that any publicity as to increase be couched in conservative terms.

It is felt that the conference brought out several points that would be helpful to Alabama at this time. The fact that the State Health Department is an integral part of organized medicine might make unnecessary such an elaborate committee as suggested. In fact, the campaign affords an opportunity for the local medical profession and the county health units to cooperate in increasing facilities for examination. Participation in the program might be somewhat as follows:

1. Nutrition should form a major activity for the coming year in which both the medical profession and health units, as well as all interested agencies, should participate.

2. Malnutrition should receive especial consideration in school examinations conducted this year.

3. The planning and securing of an adequate diet might be emphasized in the educational work of county health units, demonstration agents, etc., during the coming year.

4. If possible, all children should receive a medical examination during the coming year for the detection of malnutrition and especial effort should be made to reach the preschool child.

5. Each county medical society should study the problem and where possible participate in these examinations in order that the entire county may be covered.

6. There must be follow-up of the examination, especially where cases of malnutrition exist, to the end that the child be provided with an adequate diet. A great opportunity for nurses, home demonstration agents and relief workers is here provided.

7. For all cases in families on relief, the state and county relief organizations are in a position to furnish adequate remedial measures.

8. State and county relief organizations might extend the service to render some assistance in families with malnutrition among children, although not at present on relief.

9. The occasion might well be utilized for organizing examination of preschool and school children in counties without health units. Such work might well demonstrate the need and usefulness of a health unit.

Committee on Legislation and Medical Economics

Said the old doctor to some of his colleagues who had gathered about his chair at the club: "I was just this minute comparing the medical profession to a dog."

"I know a pup," continued the kindly old gentleman, "whose master keeps him tied up. This Airedale lives in a grassy back yard, and runs along under a wire on a chain. He covers his owner with caresses when he is released. But in spite of the affection between them, there is a certain servility about that dog; he cringes; there is something slavish in his manner. He cannot forget his life is bounded by the length of a chain."

The medical man went on. "Every one of us is acquainted with a dog that is free. Head up, eyes bright, he goes where he will. And there seems to be a mutual respect between him and the man he serves and loves."

"I like," remarked the physician, "to think of the public as our master." He smiled.

"Yes," said he, "and I can think of the medical profession as the dog. In Europe, it is on the chain of state medicine, of socialized medicine." . . . He broke off.

"Let's not talk of it. They say there is nothing we can do about it, anyway. That

over here it is coming too, surely. They insist the public wants its physicians on a leash . . . Uh, m-m—maybe—maybe.” A pause.

“But, after all, we are men. For all their good qualities, dogs do not think, plan, and improve themselves and their services to meet changing conditions. Dogs do not learn from the experience of others. Nor

do they organize to carry out mutual aims.”

He reflected a moment. The small group listening remained quiet. Then, he smiled again, and leaned back in his chair.

“This won’t do. I’m turning preacher. What do you say if we go out for some fresh air . . . go anywhere we please,” added the doctor.—From the Bureau of Public Relations.

THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

THE MEDICAL ASPECTS OF RELIEF

By

J. N. Baker, M. D.
State Health Officer

Regardless of the contributing factors, the mounting interest displayed by the medical profession in problems of an economic, social and political bearing is of good omen. In times of normalcy, the scientific mind, because of its training and environs, is not likely of its own volition to be consumed by the more practical and commonplace things of life, for the reason that the average human mind can encompass just so much. Under the duress of present kaleidoscopic conditions and if anything approaching a satisfactory solution is to be hoped for, all minds—scientific, mediocre and otherwise—must unite in joint effort at solution. No thinking mind can now afford to hold back.

Organised medicine, for several reasons, should be found in the forefront of the fray. By and large, in no other group will be found more—possibly not so many—sober and reflective minds from which to draw. In many of the problems now pressing for solution, the humanities of life loom large. From what other group—even to the exclusion of the priesthood—could be drawn so large a number with such breadth of vision and the human touch and understanding now so needed, as from the medical profession? Throughout the centuries no “patient rights” for individual commercial gain have withheld the benefits to be reaped by mankind through scientific medical discovery. The commodity—relief from human pain and suffering—dispensed through

organised medicine cannot be supplied through any other source. Sooner or later, every human soul finds need for it. Our relief workers had not travelled far along their unblazed path before they stumbled squarely into the obstructing hurdle of the medical aspects of relief.

The sequence is simple and logical: unemployment breeds poverty; poverty, destitution; destitution, disease. This trinity, if permitted long to go uncurbed, will certainly bring havoc to any social structure. The initial relief program took cognizance of only the first two of the three factors mentioned above. The third, while at first not so clearly visualised, is now seen to be equally as important as the other two. The problem now confronting the medical profession is the working out of sane yet efficient methods whereby this important third factor may be harmoniously articulated with the whole. No easy task, to be sure; yet, for Alabama’s medical constituency, not an insuperable task. The first important consideration is not the immediate financial returns to be had by physicians—“the dispensers”; but rather the preservation of those intangible, yet fundamental, things inherent in the traditions and practices of the profession and which, through the ages, have come down to them in “The Code of Medical Ethics”. One of the thoughts embodied in this Code is beautifully expressed in “The Physician’s Prayer” (Maimonides):

“May the love of my fellow-man and of my art ensoul me. May not thirst for gain nor craving for fame mingle in my service, for these are enemies of truth and charity, and they might mislead me, and keep me

from doing what I ought to do for the weal of my fellow-men".

A modern pungent epigram has this to say regarding ethics: "Ethics have a measly habit of being too narrow between the eyes". It must not be permitted that this should be made applicable to the medical profession at large and more particularly to organised medicine in Alabama.

Thus much for the ethical and sentimental side of medical relief.

On the practical side of its immediate application to the problems at hand, it may be said that the State Committee on Legislation and Medical Economics, created at the last session of the Association and of which Dr. Andrew L. Glaze, of Birmingham, is chairman, has, in cooperation with the State Director of Relief Work, been endeavouring to work out plans which might be made generally applicable on a state-wide basis and which would be acceptable both to the medical profession and to the Director. The plan first submitted by the Director for those on the relief roll for the payment of seventy-five cents per office visit and one dollar and twenty-five cents per house visit, plus a certain mileage for rural trips and fixed fees for obstetric, fracture and surgical cases, was disapproved by this Committee, although the final decision of acceptance or rejection was left to each County Medical Society. At the most recent conference of this Committee, held with the Director on October 20th, a plan was adopted of organising free clinics for all ambulant cases by the County Medical Societies in each county and at

which all treatment, including venereal diseases, would be administered without cost. In return for this free clinic service, the Relief Administrator was to arrange to increase the above remuneration to be paid for the home visit. It will be seen at a glance that these clinics, if and when organised through the district members of the State Committee, will place a very definite responsibility upon each and every County Medical Society. While it be true that the profession in every county in the State is more or less well organised for scientific and public health functions, quite a few of these in the more rural areas are likely not sufficiently stabilised to permit them, without considerable organising and directional aid, to immediately assume the burden which this plan contemplates. The need for medical service is acute and urgent; and, in order to make the clinic scheme for providing this service workable and satisfactory on a state-wide basis, will call for an unusual degree of cooperative effort on the part of all the physicians in each county. The district members of the State Committee are now busily occupied in the endeavour to get the machinery set up in each county through which this service may be distributed, and are confidently relying upon the individual members of the profession to make their unstinted contribution to the furtherance of the program. The success of this plan unquestionably hinges not only upon a willingness on the part of the medical profession to donate liberally of its time and services but also to manifest a spirit of cooperation of the highest type. What will be the response to this challenge?

DEPARTMENT OF PUBLIC HEALTH

BUREAU OF ADMINISTRATION

J. N. Baker, M. D.
State Health Officer in Charge

NEW FEDERAL FOOD AND DRUGS BILL

A lengthy experience of some twenty-seven years in the enforcement of the present Federal food and drugs act has amply revealed its many deficiencies in the matter both of the prevention of abuse and of the failure to protect the health and the purse

of a rather credulous and gullible consuming public.

The President of the United States and his advisers, appreciating this fact, authorised the preparation of a new Federal Food and Drugs Act by the United States Department of Agriculture which would, in many particulars, be of a broader scope and which would correct many of the existing shortcomings and abuses. Such a bill was prepared and introduced into the Federal Sen-

ate last June by Senator Royal S. Copeland and is known as Senate Bill 1944.

Some of the ways in which this new law seeks to amplify and strengthen the old law are as follows:

"(1) Prevention of false advertising of foods, drugs and cosmetics;

(2) Prevention of traffic in poisonous cosmetics;

(3) Establishment of safe tolerance for added poisons in food;

(4) Establishment of legally binding definitions and standards for foods;

(5) Power to require permits for manufacture of potentially dangerous products when public health cannot otherwise be safeguarded;

(6) Prevention of curative claims for drugs when such claims are contrary to the general agreement of medical opinion;

(7) Requirement for definitely informative labels for food and drugs; and

(8) Power to protect the public health from future products and practices which may prove dangerous".

It is, of course, to be expected that when Congress convenes in December certain interests, selfish and inimical to the public welfare, will huddle their forces in a mass drive to either defeat or emasculate the important strengthening provisions of this proposed bill. Both the medical profession and the leaders and moulders of thought generally amongst the laity should manifest sufficient interest to see that their Senators and Congressmen are apprised of their wishes that this legislation receive favourable consideration and support at their hands.

PHYSICIANS AND THE REPORTING OF COMMUNICABLE DISEASES

It has long been an adage of health departments that "no health department, whether state or local, can adequately control communicable diseases without knowledge of when and where such cases are occurring".

Many sources of reports are available to health departments, but the most reliable reports are those obtained from the practicing profession. The health laws of the State recognized this when they put the responsibility of reporting on the physician in attendance on any case of communicable disease. If no physician is in attendance

the responsibility then falls on the head of the household. In actual practice, however, practically all cases are found through physicians' reports and through the schools.

The Alabama system of reporting diseases by means of a weekly report card has been copied by many other states and is recognized as an efficient system, as well as one that is of minimum trouble to the physician. The franked card, already addressed, needs only to be filled out with the name of the disease, name of patient, and race, sex, and age, or if no cases have occurred the return of the card indicates that fact. In spite of this simplified system only about 60% of the physicians in active practice in the State report as often as once a month. This excludes physicians who have retired from active practice and those in specialties where no communicable diseases are seen. This 60% probably represents a fair index of reporting, as a check on deaths from the various diseases shows that many a death has never been reported as a case, even if reported at the time of death.

The United States Public Health Service has established a registration area for morbidity reporting similar to the registration area for births and deaths, but up to the present Alabama has not been able to obtain admission. The standards for admission require that 75% of all clinically recognized cases be reported. That does not seem to be a particularly high standard, but up to date we have not been able to meet it.

In the past there has been some objection on the part of physicians to reporting on an open card, particularly cases of tuberculosis and of venereal disease. Beginning January 1, there will be included with the report card sent out a franked envelope so that the return can be made with privacy. Virginia, using such a system, reports 80% of its physicians reporting each week and 97% reporting during the year. There is no reason for Alabama not equalling this record.

Alabama initiated the weekly system of reporting and it is felt that this is not asking too much of the profession. Begin 1934 by acquiring the habit of reporting all cases in your practice and give the health department a chance to do some control work.

D. G. G.

BUREAU OF LABORATORIES

J. G. McAlpine, Ph. D., Director

AGGLUTININS*

THEIR SIGNIFICANCE IN CERTAIN DISEASES

3. Tularemia

Although tularemia is relatively infrequent in Alabama, it deserves especial attention at this time of the year. Sporadic cases always occur simultaneously with the open season on rabbits. Undoubtedly, erroneous diagnoses are often made because, as Francis has pointed out in a number of articles, tularemia has been called septic infection, "flu", typhoid fever and even tuberculosis. However, in this disease the agglutination test when properly applied serves to clinch the diagnosis without question.

As in typhoid fever, agglutinins for *Bact. tularensis* are absent during the first week but unlike the Widal reaction they are constantly present during the second week. There is an abrupt rise in the titer in the third week which is very characteristic. From this time on, the titer of the serum rapidly increases, reaching its maximum in the fourth, fifth, sixth or seventh week. After this there is a gradual decline. Therefore, in patients who have a history of dressing wild rabbits or being bitten by a tick or a fly, or who have a persistent ulcer or primary conjunctivitis, or who have glandular enlargement and have had fever of several weeks duration, the agglutination test should be performed. A positive result with an increasing titer on subsequent examinations definitely indicates tularemia.

The persistence of agglutinins in the blood of recovered patients is of special interest in this disease. In some cases these immune bodies have been found 18 years after convalescence. Francis¹ states "I do not know of any other disease in which an agglutination test will set the diagnosis in such certain terms after so many years." Simpson², by the use of this reaction, demonstrated that tularemia had been present in Dayton, Ohio, for two decades but had been unrecognized. For this reason, when

there is any doubt, several specimens at intervals should be run; if the titer increases the diagnosis is assured.

There is one other feature of the agglutination reaction which should receive consideration and that is the cross agglutination which occurs with *Brucella abortus*, the causative factor of undulant fever. Francis¹ reported that of 570 serums from patients who had tularemia 129 showed this phenomenon. In another paper Francis and Evans³ have summarized their findings as follows: "(1) That on account of the frequent cross agglutination between *tularensis* on the one hand and *abortus* and *melitensis* on the other, serums from suspected cases of tularemia and undulant fever should be tested for agglutination of *tularensis* and either *abortus* or *melitensis* unless the clinical history points definitely to a recognized source of infection for tularemia or undulant fever. (2) That a serum which shows a marked difference in titer for *tularensis* on the one hand and for *abortus* or *melitensis* on the other can usually be classed by the higher titer as due either to tularemia or to one of the varieties of *Brucella melitensis*. (3) That a serum which agglutinates all three organisms to the same or nearly the same titer should be subjected to the agglutinin absorption tests."

The agglutination test is the only one which can be applied by the Laboratories of the State Department of Health. Animal inoculation serves to settle the diagnosis in some cases, but, because of the high infectivity of *Bact. tularensis*, this method is not widely used. Almost every laboratory worker who has experimented with this organism has contracted the disease. However, there is little doubt of the reliability of the agglutination test when properly performed and interpreted. If there is any doubt the examination should be repeated.

1. Francis, E.: Symptoms, Diagnosis and Pathology of Tularemia, J. A. M. A. 91: 1155-1161, Oct. 20, '28.

2. Simpson, W. M.: Tularemia (Francis' Disease); A Clinical and Pathologic Study of 48 Non-Fatal Cases and One Rapidly Fatal Case With Autopsy, Occurring in Dayton, Ohio, Ann. Int. Med. 1: 1007-1059, June '28.

3. Francis, E., and Evans, A. C.: Agglutination, Cross-Agglutination, and Agglutinin Absorption in Tularemia, Pub. Health Rep. 41: 1273-1295, June 25, '26.

*Third in a series on the subject. The first and second installments appeared in October and November, respectively.

As Shelton⁴ has said, "the greatest difficulty in diagnosis is that tularemia is not borne in mind. . . The final diagnosis rests on an agglutination of *Bact. tularense* by blood serum collected after the first week of the disease."

BUREAU OF PREVENTABLE DISEASES

D. G. Gill, M. D., Director

HEALTH CONDITIONS AMONGST FAMILIES RECEIVING RELIEF

During the past few months the various county health departments have conducted a health audit of some of the families receiving relief. This survey was undertaken in an attempt to locate all the cases of certain diseases amongst this group, and, if possible, to provide some assistance. All the families known to have any of these diseases were included in the survey, so that the number of cases found is larger than would be expected in a group of this size.

Up to the first of November there had been surveyed 12,017 families, embracing a total of 58,597 people. These families were living in forty counties of the State, but exclude the three large counties, Jefferson, Mobile, and Montgomery, so that this group is largely rural. Hence there is a greater incidence of malaria, hookworm, and pellagra than might be expected in a random sampling of the population.

The survey revealed the following number of cases:

Pellagra—1518
Syphilis—1007
Tuberculosis—1047
Malaria—3193
Hookworm—3912

Pellagra:

The etiology of pellagra is still in dispute, but the influence of diet is recognized. Many of these families have been on inadequate diets for the past three years, so one would expect a high incidence of this disease. Following this survey the Alabama Relief Administration arranged for a supply of brewer's yeast and canned salmon for all cases found.

4. Shelton, T. S.: Tularemia, Nelson Loose-Leaf Living Medicine, Vol. II, p. 191, New York, Thomas Nelson & Sons., 1929.

Syphilis:

This survey emphasizes again the prevalence of venereal diseases amongst the general population and the problem facing any organization in attempting treatment. The medical profession, of necessity, must administer this treatment, but the cost of prolonged treatment puts a heavy burden on the individual or whomever assumes this cost. Unfortunately the State Health Department is not in a position to assist very materially at present.

Tuberculosis:

Of the 1047 cases discovered, 693 were reported as in need of isolation. Most new cases of this disease arise from intimate contact with existing cases, and any steps that will limit this spread are very much worth while. The screened porch, additional room, or separate cottage, are all valuable as preventives. Relief workers are available for projects of this type, but materials must be supplied through some other agency.

733 of these 1047 cases were reported as in need of food. The overfeeding of patients is no longer recognized as good treatment, but a patient with tuberculosis does require adequate, wholesome food, and the Relief Administration has authorized additional food for these cases.

Malaria:

The large number of cases of malaria found is rather surprising, although the survey covered many of the counties known to have a malaria problem. Ordinarily most of these people attempt self-medication and rarely call a physician, so the true incidence of this disease is only found by surveys of this type. Up to November 1, the Alabama Relief Administration distributed 64,000 capsules of quinine to these cases.

Hookworm:

The cases of hookworm found were congregated largely in the southern counties where soil conditions are favorable to spread. Until sanitation is state-wide, hookworm will remain, although treatment will lower the degree of infestation and limit the damage done.

The treatment of acute illness amongst persons on relief is being handled by the

medical profession in cooperation with the Relief Administration. These chronic debilitating diseases present a problem only differing in its acuteness.

BUREAU OF VITAL STATISTICS

W. T. Fales, Sc. D., Director

HOW COMPLETE IS BIRTH REGISTRATION IN ALABAMA

In the twelve months preceding the census of April 1, 1930, there were registered in Alabama 63,811 live births. This represented an excess of 2,781 births or 4.6 per cent over the number of children under one year of age enumerated in the census. In every census, it is well known that the number of children under one year of age is less than those counted as one year old. This means that the number counted as under one year of age is always understated. Further, those babies born during the twelve months preceding a census who die are not counted in the census. Authorities, therefore, agree that the number of births during the preceding twelve months to a census should exceed the number of children under one year of age counted in the census by at least 10 per cent. In a state with as large a negro population and as high a percentage of illiteracy as Alabama, the error of understatement of the population under one year of age is higher and the excess should be considerably greater, perhaps 15 per cent.

In a recent study¹, Professor Wilcox of Cornell University made such a comparison of the number of children under one year of age enumerated at the last census and the number of births registered for the preceding twelve months in each of the forty-six states and the District of Columbia in the Birth Registration Area. On this basis, Alabama was considered as having moderately deficient registration. Twenty-five states and the District of Columbia showed a larger percentage of excess births over enumerated children under one year of age than Alabama. Ten states and the District of Columbia showed an excess of more than 10 per cent and

were considered as having fairly complete registration as is summarized in Table I.

TABLE I

Distribution of States of The U. S. Birth Registration Area, According to Completeness of Registration, 1930.

Completeness of Birth Registration	Excess of Births	States in each Class	
		Number	Per cent
Fairly complete.....	10 per cent or more.....	11	23
Slightly deficient.....	5-9.9 per cent.....	13	28
Moderately deficient.....	0-4.9 per cent.....	11	23
Extremely deficient.....	No excess.....	12	26
Total.....		47	100

Only three southern states, Virginia (10.7% excess), Florida (5.4% excess) and Mississippi (5.2% excess) showed a greater excess than Alabama. Our State has shown a great improvement over the status of registration at the time of the previous census taken January 1, 1920. At that time, the number of registered births in the preceding twelve months was actually 28.4 per cent less than the number of children under one year of age enumerated at that census. It will be recalled that the present registration law, providing for reporting of births within ten days and setting up the machinery of small registration districts, with a local registrar responsible for enforcing the registration laws in each district, went into effect January 1, 1920. The improvement under this law has been marked.

While the gain in registration during the past thirteen years has been gratifying, analysis of the excess of births over enumerated population under one year in each county reveal the need of further improvement. Alabama wants complete registration. These figures for each county are given in Table II, the counties being arranged in order of the percentage excess for each county. Only fourteen counties in Alabama had an excess of over 10 per cent, and twelve had an excess of more than five per cent, but less than ten per cent. In many of the remaining counties the number of births registered was less than the number of children under one year of age enumerated in the census, or would have been less than this number if the number of deaths under one year of age were subtracted. All of these counties must be considered as having grossly deficient registration.

Such a condition does not speak well for reporting. Since 1929 some counties have

1. Wilcox, Walter F.: Introduction to the Vital Statistics of the United States, 1900 to 1930. Gov. Printing Office, 1933.

shown considerable improvement in registration. For example, forty of the sixty-seven counties showed increase in the number of births reported in 1932 over that reported for 1929. In many counties this increase was sufficient to indicate a definite improvement in registration. During the present year, the number of births reported has fallen precipitously. Part of the de-

crease is actual and follows the decrease in the number of marriages during the past three years and is a well known phenomenon coincident with economic depressions. In the face of the small excess of births over the census figures, constant effort must be made to secure complete registration in Alabama.

Every baby born in Alabama is entitled to registration. In these days of vast social changes, there is nothing clearer than that the birth certificate is being called upon more and more for the establishment of age, citizenship, place of birth, etc. All of us who have responsibilities in reporting of births must discharge these obligations. Every year the passing of some doctor who has been careless about reporting leaves literally hundreds of children handicapped because of the absence of such a public record.

The comparison for Alabama brought out one other fact that is significant. While the excess of births over the number of children under one year of age in the census was 10.14 per cent for the negro population of Alabama, this excess was only 1.59 per cent for the white population. This indicates that the registration of negro babies is more complete than that of white babies. The physicians of the State deliver 88 per cent of the white babies. Clearly, if Alabama is to improve and maintain the completeness of its birth registration, every physician in the State must fulfill his legal, social and moral duty every time he delivers a baby and see that the report is made promptly.

BUREAU OF SANITATION

G. H. Hazlehurst, Director

ANTICIPATING MALARIA CONTROL IN THE TENNESSEE VALLEY

The development of that part of the Tennessee River which traverses Alabama, with special reference to the formation of lakes, brings to consideration the problem of malaria control.

Wilson Dam, designed to care for the problems of power and transportation, creates a lake some 16 miles long with 140 miles of shoreline which affects directly many of the people in the counties of Lauderdale and Colbert. Malaria control on

TABLE II

Excess of Deficit of Births Registered During the Twelve Months Preceding the Last Census and the Children Under One Year of Age Enumerated at the Census for Each County, Alabama

	Census 1930	Births Apr. '29- Mch. '30	Excess + or Deficit—	Per Cent Excess + or Deficit—
Macon	508	721	+213	+41.9
Wilcox	530	685	+155	+29.3
Washington	317	407	+90	+28.4
Dallas	1117	1421	+304	+27.2
Bullock	446	531	+85	+19.1
Russell	562	662	+100	+17.8
Monroe	720	846	+126	+17.5
Mobile	2135	2467	+332	+15.5
Jefferson	8227	9457	+1230	+14.9
Sumter	576	680	+84	+14.6
Baldwin	558	631	+73	+11.3
Barbour	701	779	+78	+11.1
Shelby	601	668	+67	+11.1
Talladega	1145	1263	+118	+10.3
Lowndes	517	567	+50	+9.7
Montgomery	1694	1852	+158	+9.3
Pike	631	686	+55	+8.7
Escambia	614	663	+49	+8.0
Lee	762	822	+60	+7.9
Cherokee	575	620	+45	+7.8
Elmore	785	839	+54	+6.9
Covington	970	1036	+66	+6.8
Franklin	762	810	+48	+6.3
Coffee	829	878	+49	+5.9
Henry	588	619	+31	+5.3
Morgan	1089	1143	+54	+5.0
Clarke	590	616	+26	+4.4
Hale	582	605	+23	+4.0
Marshall	1048	1087	+39	+3.9
Tallapoosa	781	807	+26	+3.3
Blount	743	767	+24	+3.2
Madison	1696	1746	+50	+2.9
Chambers	884	904	+20	+2.3
Walker	1697	1714	+17	+1.0
Fayette	486	489	+3	+0.6
Colbert	653	656	+3	+0.5
Lauderdale	1021	1024	+3	+0.3
Etowah	1624	1625	+1	+0.0
Tuscaloosa	1429	1424	-5	-0.4
Calhoun	1398	1389	-9	-0.6
Cullman	1115	1107	-8	-0.7
Limestone	1033	1023	-10	-1.0
Autauga	449	440	-9	-2.0
Bibb	514	500	-14	-2.7
Geneva	748	723	-25	-3.3
Dale	604	582	-22	-3.6
Houston	1064	1025	-39	-3.7
Clay	426	409	-17	-4.0
Marengo	743	713	-30	-4.0
Coosa	314	298	-16	-5.1
DeKalb	1212	1148	-64	-5.3
Perry	686	650	-36	-5.3
Choctaw	468	438	-30	-6.4
Winston	492	467	-25	-7.1
Marion	740	687	-53	-7.2
Greene	417	384	-33	-7.9
Jackson	1085	992	-93	-8.6
Lawrence	846	770	-76	-9.0
Chilton	579	526	-53	-9.1
Pickens	636	578	-58	-9.1
Crenshaw	555	502	-53	-9.5
Lamar	509	460	-49	-9.6
Conecuh	677	609	-68	-10.1
Randolph	732	656	-76	-10.4
Butler	747	654	-93	-12.4
Cleburne	343	297	-46	-13.4
St. Clair	705	573	-192	-27.4

this lake has been difficult as the operation of the dam has not lent itself fully to this purpose. This has been especially true for the season just past due to water elevations maintained as necessary for the construction of the navigation lock at its headwaters.

With the building of the General Joe Wheeler Dam the river will be backed up some 80 miles, and the counties of Lauderdale, Lawrence, Limestone, Morgan, Madison, Marshall, and Jackson will be affected. There will be several hundred miles of shoreline to this lake and thousands of persons within a possible mosquito flight range zone.

When the project was in the jurisdiction of the War Department a reconnaissance survey was made by an engineering officer in company with a representative of the State Health Department. A report was rendered covering the basic needs of the development.

The project has now been transferred from the War Department to the Tennessee Valley Authority. Dr. E. L. Bishop, State Health Officer of Tennessee, was appointed by the Authority as the Advisory Medical Officer in matters of public health. Shortly after his appointment a conference was held in Florence with him, by Dr. J. N. Baker, State Health Officer of Alabama, and members of his staff. The matter of malaria control has now been officially brought to the attention of the Authority by this Department and the importance of its consideration in basic planning has been pointed out.

The successful handling of the many large impounded water projects in the State in the past 10 or 15 years should provide the basic knowledge, which, if it is possible to use, should result in these waters being put up and maintained in such manner as to cause a minimum of malaria transmission. Experience gained in this and other states indicates that water level fluctuation is a most important and often a deciding factor. The same cooperation is anticipated with the Tennessee Valley Authority as has been obtained with the private power companies.

The violent epidemics which occurred around Lock 12 (now Lay Dam) on the Coosa River and the Hale's Bar development on the Tennessee River below Chattanooga

before the principles of impounded water control had been developed are in marked contrast to results which have been obtained on the large basins established in recent years. Impounded in the old days, such a series of lakes as will stretch across the northern part of our State by the development of the Tennessee would have been a veritable curse.

CURRENT STATISTICS

*PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA

	Sept.	Oct.	Estimated Expectancy Oct.
Typhoid	98	51	132
Typhus	143	75	7
Malaria	1320	1279	593
Smallpox	1	0	8
Measles	53	28	31
Scarlet fever	187	192	176
Whooping cough	92	52	68
Diphtheria	326	310	366
Influenza	84	129	90
Mumps	23	6	20
Poliomyelitis	6	1	5
Encephalitis	5	5	1
Chickenpox	3	14	14
Tetanus	3	7	8
Tuberculosis	250	250	341
Pellagra	99	81	31
Meningitis	3	2	3
Pneumonia	68	72	75
Syphilis (private cases)	292	204	168
Chaneroid (private cases)	2	3	12
Gonorrhea (private cases)	168	172	188
Ophthalmia neonatorum	3	1	1
Trachoma	0	0	1
Tularemia	0	0	0
Undulant fever	0	1	2
Dengue	0	0	4
Rabies—human cases	0	1	0
Positive animal heads	47	50	

*As reported by physicians and including deaths not reported as cases.

The Estimated Expectancy represents the median incidence of the past nine years.

PROVISIONAL MORTALITY STATISTICS

Alabama September 1933

CAUSES	Number of Deaths Registered Sept. 1933			Annual Rate per 100,000 Population		
	White	Colored	Total	Sept. 1933	Sept. 1932	Sept. 1931
ALL CAUSES	1119	954	2073	920.2	875.1	930.2
Typhoid fever	9	3	12	5.3	8.1	12.2
Smallpox						1.4
Measles					2.7	0.9
Scarlet fever					4.0	3.6
Whooping cough	3	10	13	5.8	9.8	13.1
Diphtheria	20	2	22	9.8	4.9	8.6
Influenza	12	10	22	9.8	22.5	26.3
Pneumonia, all forms	40	33	73	32.4		0.9
Poliomyelitis	2		2	0.9		3.2
Tetanus	2	3	5	2.2	4.5	83.9
Tuberculosis, all forms	54	74	128	56.8	63.0	76.2
Tuberculosis, pulmonary	49	70	119	52.8	55.8	14.5
Malaria	33	22	55	24.4	13.9	52.6
Cancer, all forms	95	35	130	57.7	48.1	10.0
Diabetes mellitus	14	6	20	8.9	10.8	14.5
Pellagra	12	16	28	12.4	10.8	
Cerebral hemorrhage, apoplexy	68	60	128	56.8	56.7	104.8
Diseases of heart	140	105	245	108.7	111.6	
Diarrhea and enteritis, Under 2 years	25	22	47	20.9	16.2	24.5
2 years and over	15	4	19	8.4	7.6	6.3

Nephritis	97	66	163	72.3	79.2	79.4
Puerperal state, total	18	25	43	19.1	17.5	18.6
Puerperal septicemia	10	8	18	8.0	4.5	8.2
Congenital malformations	15	4	19	8.4	7.6	2.7
Congenital debility and other diseases of early infancy	54	46	100	44.4	58.0	45.8
Senility	13	27	40	17.8	18.4	15.0
Suicides	8	1	9	4.0	7.2	5.9
Homicides	14	45	59	26.1	16.2	18.1
Accidental burns	3	1	4	1.8	1.3	5.4
Accidental drownings	3	2	5	2.2	5.4	1.8
Accidental traumatism by firearms	2	1	3	1.3	2.2	3.6
Mine accidents	1		1	0.4	0.9	3.1
Railroad accidents	6	4	10	4.4	6.7	4.1
Automobile accidents	35	19	54	24.0	23.4	23.1
Other external causes	36	16	52	23.1	25.2	21.3
Other specified causes	197	132	329	146.0	126.4	153.7
Ill-defined and unknown causes	73	160	233	103.4	85.0	93.9

Medical News

(Secretaries of county medical societies and other physicians will confer a favor by sending for this section of the Journal items of news relating to society activities.)

Dr. H. Earl Conwell, Employees' Hospital, Fairfield, read a paper before the Clinical Congress of the Connecticut State Medical Society at the Yale University Medical School, Sterling Building, New Haven, Connecticut, on September 21, 1933. The title of the paper was "Some Problems Frequently Encountered in the Treatment of Recent Fractures".

* * *

Dr. E. P. Lacey of the Jefferson County Medical Society, Bessemer, died on October 22, of uremia.

* * *

At a meeting of the Baldwin County Medical Society held at Foley on November 2, the following officers for 1933-34 were unanimously elected: President—Dr. W. C. Holmes; Vice-President—Dr. J. C. McLeod; Secretary-Treasurer—Dr. J. Chason. Dr. J. C. McLeod was elected to succeed himself as a member of the Board of Censors for a five-year period.

Dr. R. Van Iderstine's application for membership was presented.

* * *

On October 14, Dr. Samuel Ralph Terhune of Birmingham was married to Miss Pauline Carolyn Veitch, also of Birmingham.

* * *

Dr. Luther L. Hill, Montgomery, former president of the Medical Association of the State of Alabama, gave the annual address commemorating the 79th Anniversary of the birth of William Crawford Gorgas before the Lafayette Guild Chapter of the Gorgas

Medical Society, University of Alabama, on October 3. His subject was "Medical History". Following the lecture, Dr. Hill was made an Honorary Fellow of the Gorgas Society.

* * *

The Marengo County Medical Society held a special session on October 19. Mrs. Ethel H. Crumpton, County Social Service Director, discussed the medical care of persons on relief. Mrs. Janie Harrison, County Health Nurse, talked on the importance and limitations of midwifery. A paper on spinal anesthesia was read by Dr. E. B. Bailey.

Following the meeting, a delicious dinner was served at the Westbrook Hotel through the courtesy of Dr. E. T. Norman, County Health Officer.

* * *

The Bryce Hospital entertained the Tuscaloosa County Medical Society on October 9 at a turkey dinner. The scientific program by members of the hospital staff included the following subjects: The relation of the problem, mental disease and mental deficiency, to the State; general paralysis in the light of recent methods of treatment; sterilization of mental deficient; encephalitis-lethargica.

* * *

It is reported that Dr. J. R. McCord's post-graduate course of lectures on obstetrics, given at Dothan the week of October 23, was very instructive. It is said that his new ideas awakened in the profession a desire to do better obstetric work.

Book Abstracts and Reviews

Lectures on The History of Medicine: A Series of Lectures at the Mayo Foundation and the University of Minnesota, Wisconsin, Iowa, Northwestern and the Des Moines Academy of Medicine. 489 pages. Illustrated. Philadelphia and London. W. B. Saunders, publishers. 1933. Cloth.

This book contains a delightful series of lectures on the history of medicine given between October 1926 and January 1932, under the auspices of the Mayo Foundation and other medical centers in this country.

There are eighteen lectures presented. Men of learning were invited to talk on historical topics of their own selection and while no attempt was made to cover the entire field nor to present the topics in any logical sequence, the book is well planned and the reader is well able to visualize the gaps.

Among the most interesting lectures herein are (1) The History of Pathology; (2) Billing's, A Maker of American Medicine; (3) Ambrose Pare; (4) John Hunter: The Founder of Scientific Surgery; (5) The First American Medical Journals; (6) A Sketch of Virchow's Life and Time, and (7) The Physician of The Dance of Death by the late Professor Aldred S. Worthin.

There are numerous historic events presented which are not found in even more elaborate histories of medicine. Renaissance Midwifery, another of the lectures, by Dr. Joseph L. Miller, contains many high lights of the evolution of modern obstetrics not found in other works on medical history.

H. W.

The Arches of the Years, by Holliday Sutherland. William Morrow and Company, publishers. New York, 1933. 293 pages. Cloth. Net \$2.75.

To the physician who likes occasionally to slip away from text-books and medical journals and read something lighter and more refreshing, especially something that deals with his own profession, this autobiography written by an English physician should be a source of real delight. The author must have been a charming sort of man, a man who loved life and people and the out-of-doors. He had that capacity for understanding people that seems to be characteristic of most of the members of his profession and he describes the events of his life with the same objective attitude whether he be the hero or the villain. Often he played jokes and often jokes were played on him. He laughs at both alike. An adventurous soul he loved to hunt. His description of a whaling expedition is thrilling, but the most exciting event in the book is his attempt at bull fighting. In his chapters "The Gate of the Sun", "Blood and Sand" and "The Trial" he has given a description of bull fighting which surpasses anything the reviewer has ever read. For your lighter moments this book is recommended with enthusiasm.

C. K. W.

Surgery of the Stomach and Duodenum: By J. Shelton Horsley, M. D., F. A. C. S., LL. D., Attending Surgeon, St. Elizabeth Hospital, Richmond, Virginia. 252 pages with 136 illustrations. C. V. Mosby Company, publishers. St. Louis, Mo., 1933. Cloth, \$7.50.

Anatomy, embryology and physiology, which are so essential for a thorough understanding of any disease process, are reviewed in the first chapter. The chapter on Recent Concepts of Gastric Physiology is interesting. Eighty per cent of the gastric symptoms are attributed to dysfunction of the muscular apparatus of the stomach and intestines.

Diagnosis of all of the less common diseases of the stomach and duodenum are considered briefly, but large and excellent chapters are devoted to peptic ulcer and cancer of the stomach. Attention is called to a statement by Eusterman that only one out of nine or ten peptic ulcers are in the stomach and that the large majority of all gastric lesions are carcinomatous. Thirty per cent of all of the deaths from cancer result from cancer of the stomach. In a series of 176 necropsies on patients with cancer of the stomach reported by Margaret Warwick 23 per cent had no metastasis, the growth being confined to the stomach at the time of death.

The conclusion was drawn that many opportunities for cure must be missed.

There is an excellent chapter devoted to pre- and postoperative treatment, anesthesia and incisions for operations on the stomach and duodenum. Gastric lavage with solution of $\frac{1}{2}$ of 1 per cent hydrochloric acid is advocated before operation on patients with septic ulcerating wounds of the stomach. The intravenous administration of glucose in Ringer's solution is strongly advocated for supplying fluids and nourishment to patients before and after operations. Ethylene is the anesthetic of choice for operations on patients who are good risks. In older patients and poor risks local anesthesia is preferred.

Over half of the two hundred and fifty pages is devoted to surgical technique. All of the more important operations are considered. The author usually states his preference and the reasons for it. Procedures devised by the author are advocated for gastropexy and pyloroplasty. Dr. Horsley believes if there is a moderate amount of pyloric stenosis with much scar tissue in the duodenum the best results are obtained by gastro-enterostomy and no attempts at a pyloroplasty. He prefers the gastro-enterostomy for duodenal ulcers with occlusion of the duodenum by a heavy catgut ligature drawn snugly around the pylorus. The subtotal gastrectomy is used as a secondary operation for the small number of ulcers that recur following gastro-enterostomy. The author prefers a partial gastrectomy for gastric ulcers that are accessible.

The book is well written. It has an easy style and comprehensively covers the allotted ground. It is well worth while to anyone doing surgery on the stomach or duodenum.

L. H., Jr.

Obstetrics and Gynecology: Volume 111 and Index. By 80 leading specialists. Edited by Arthur Hale Curtis, M. D., Professor and Head of the Department of Obstetrics and Gynecology, Northwestern University Medical School; Chief of the Gynecological Service, Passavant Memorial Hospital, Chicago, Ill. Complete in three volumes and separate desk index. 3,500 pages with 1,664 illustrations, many in colors. Philadelphia and London. W. B. Saunders Company, publishers. 1933. Per set, cloth, \$35.00 net.

This third volume and the index volume complete the set on gynecology and obstetrics edited by Dr. Curtis. Several chapters are of exceptional value—among them C. Jeff Miller's chapter on dysmenorrhea, Emile Novak's chapters on the various disturbances of menstruation, I. Rubin's chapter on sterility and Davis' chapter on leucorrhea. This last named chapter is one that is important for every specialist and general practitioner to read. Familiarity with the contents of this one chapter would save much suffering from a curable complaint and much needless curettage. The chapters by Allen, Comer, Smith and Engel, on the relation of the various endocrines to the female reproductive cycle in health and disease, cover in a few pages the important points in the vast literature on the subject. The chapter on roentgenology in obstetrics and gynecology by Case covers the x-ray of the fetus, x-ray pelvimetry, lipiodol uterosalpingography, pneumoperitoneum and x-ray diagnosis of the diseases of the breast.

This set of books contains one and a half volumes on obstetrics presented as well as, but no better than, the best current text-books on the subject.

The one and a half volumes on gynecology represent, in the reviewer's opinion, the best work on the subject now in print.

C. K. W.

A Text-Book of Medicine: (By 141 American Authors) Edited by Russell L. Cecil, A. B., M. D., Sc. D., Professor of Clinical Medicine, Cornell University, Medical College; Associate Attending Physician, New York Hospital, New York City. And Associate Editor for Diseases of the Nervous System, Foster Kennedy, M. D., F. R. S. E., Professor of Neurology, Cornell University, Medical College; Director, Department of Neurology, Bellevue Hospital, New York City. Third edition, revised and entirely reset. 1,664 pages, illustrated. Philadelphia and London. W. B. Saunders Company, 1933. Cloth, \$9.00 net.

Until the first edition of "Cecil" was laid on my desk, Osler was my medical Bible. Now "Cecil" is my New Testament.

First published in 1927, the book was so popular that it was revised in 1930 and now three years later a third edition is published. A few of the original authors have been lost by death but new contributors have been added, others have been rewritten or revised. The new articles cover the following subjects—plague, the erythemas, whooping cough, kala-azar, rat-bite fever, psittacosis, hypotension, diabetes, diseases of the bronchi, diseases of the parathyroids, suprarenals and pituitary, poisoning by radio-active substances, the neuroses.

The price of the book is within the reach of every physician.

C. K. W.

Truth About Medicines

NEW AND NONOFFICIAL REMEDIES

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

Halibut Liver Oil.—A fixed oil obtained from the fresh livers of *Hippoglossus hippoglossus*. It is biologically assayed to contain not less than 32,000 units of vitamin A (U. S. P. X) per gram and not less than 200 units of vitamin D (Steenbock) per gram. It contains no other oil as diluent, or for adjusting the vitamin potency. The actions and uses of halibut liver oil are the same as those for cod liver oil (see Cod Liver Oil and Cod Liver Oil Preparations, New and Nonofficial Remedies, 1933, p. 270).

Abbott's Haliver Oil, Plain.—A brand of halibut oil N. N. R. Abbott's Laboratories, North Chicago, Ill.

Mead's Halibut Liver Oil.—A brand of halibut liver oil—N. N. R. Mead Johnson & Co., Evansville, Ind.

Parke-Davis Haliver Oil, Plain.—A brand of halibut liver oil—N. N. R. Parke-Davis & Co., Detroit, Mich.

Halibut Liver Oil with Viosterol 250 D.—Halibut Liver Oil to which has been added

sufficient viosterol (irradiated ergosterol) to assure a potency of 3,333 vitamin D units (Steenbock) per gram; the halibut liver oil used is adjusted (when necessary) to have a vitamin A potency of not less than 32,000 U. S. P. X units of vitamin A per gram by the addition of fish liver oil from one or more of the species *Gadus morrhua*, *Ophiodon elongatus* and *Anoplopomafimbria*. The actions and uses of halibut liver oil with viosterol 250 D are the same as those for cod liver oil (See Cod Liver Oil and Cod Liver Oil Preparations New and Nonofficial Remedies 1933, p. 270; see also Viosterol, New and Nonofficial Remedies, 1933, p. 427)

Squibb Stabilized Refined Halibut-Liver Oil.—A brand of halibut liver oil—N. N. R. E. R. Squibb & Sons, New York.

Abbott's Haliver Oil with Viosterol 250-D.—A brand of halibut liver oil with viosterol 250 D-N. N. R. Abbott Laboratories, North Chicago, Ill.

Mead's Halibut Liver Oil with Viosterol 250-D.—A brand of halibut liver oil with viosterol 250 D-N. N. R. Mead Johnson & Co., Evansville, Ind.

Parke-Davis Haliver Oil with Viosterol 250-D.—A brand of halibut liver oil with viosterol 250 D-N. N. R. Parke-Davis & Co., Detroit, Mich.

Squibb Stabilized Refined Halibut-Liver Oil with Viosterol 250 D.—A brand of halibut liver oil with viosterol 250 D-N. N. R. No other oil is used to adjust the vitamin potency. E. R. Squibb & Sons, New York.

Tuberculin "O. T." (Old Tuberculin).—This product is also marketed in packages containing 1 cc. of tuberculin (New and Nonofficial Remedies, 1933, p. 377). Lederle Laboratories, Inc., Pearl River, N. Y.

Diphtheria Toxin for the Schick Test (Diluted).—A diphtheria toxin (New and Nonofficial Remedies, 1933, p. 398) prepared by growing diphtheria bacilli in broth, aging and diluting with a solution containing sodium borate 0.36 per cent, boric acid 0.53 per cent, and sodium chloride 0.61 per cent. The product is ready for use. It is marketed in packages containing sufficient material for ten, twenty-five and fifty tests. Hixson Laboratories, Inc., Johnstown, Ohio. (Jour. A. M. A., November 18, 1933, p. 1634)

Diphtheria Toxoid-Squibb.—This product is also marketed in packages of one vial containing 1 cc. of diluted diphtheria toxoid

(New and Nonofficial Remedies, 1933, p. 386) for the reaction test. E. R. Squibb & Sons, New York.

Gas Gangrene Antitoxin, Refined and Concentrated.—An anaerobic antitoxin (New and Nonofficial Remedies, 1933, p. 359) prepared by immunizing horses individually against the toxins of *B. perfringens* (*B. welchii*) and vibrion septique. It is marketed in packages of one syringe containing 10,000 units of perfringens antitoxin and 10,000 units of vibrion septique antitoxin. The National Drug Co., Philadelphia.

Tetanus Perfringens Antitoxin, Refined and Concentrated.—An anaerobic antitoxin (New and Nonofficial Remedies, 1933, p. 359) prepared by immunizing horses individually against the toxins of *B. tetani*, *B. perfringens* (*B. welchii*) and vibrion septique. The product is marketed in packages of one syringe or one ampule-vial containing 1,500 units of tetanus antitoxin, 2,000 units of perfringens antitoxin and 2,000 units of vibrion septique antitoxin. The National Drug Co., Philadelphia.

Erysipelas Antistreptococcus Serum.—An erysipelas antistreptococcus serum (New and Nonofficial Remedies, 1933, p. 370) obtained from horses immunized with hemolytic streptococci isolated from patients with erysipelas, also with the toxins produced by these organisms. The product is marketed in packages of one syringe containing 10 cc. The National Drug Co., Philadelphia.

Schick Test, Peptone Diluent (New and Nonofficial Remedies, 1933, p. 400).—For the control test, the product is supplied in single vial packages of 1 cc. and 5 cc., containing, respectively, sufficient heated diphtheria toxin diluted with peptone solution, for ten and fifty control tests. The National Drug Co., Philadelphia.

Tuberculin Old (Human).—Also supplied on special order, in 10 cc. ampule vials of five serial dilutions; dilutions 1 to 4 representing in each two minims, respectively, 0.001 mg. 0.01 mg., 0.1 mg. and 1 mg. of old tuberculin (New and Nonofficial Remedies, 1933, p. 377), and dilution 5 representing 10 mg. of old tuberculin in each minim. The National Drug Co., Philadelphia.

Capsules Ephedrine Sulphate—Abbott, $\frac{3}{8}$ grain.—Each capsule contains ephedrine sulphate—Abbott (New and Nonofficial

Remedies, 1933, p. 192), $\frac{3}{8}$ grain. Abbott Laboratories, North Chicago, Ill.

PROPAGANDA FOR REFORM

The Mineralization and Vitaminization of Milk.—The unique significance of milk in the American dietary offers the excuse—or perhaps one should say the reason—for attempting to improve it nutritionally as well as from a sanitary standpoint. Recent proposals include what have been called the “mineralization” and the “vitaminization” of milk. It may properly be asked whether the addition of inorganic compounds and vitamin products to market milk as it is ordinarily produced is justifiable. Most authorities will agree with Krauss of the Ohio Agricultural Experiment Station who points out that the haphazard addition of all sorts of vitamins and mineral elements to milk jeopardizes the unique and excellent position now enjoyed by this product in the eyes of the general public and the medical profession. In spite of the intriguing mystery and glamor that surrounds some of the newer discoveries in nutrition, the fact must not be lost sight of that plain, ordinary milk is the best single food available and is thus considered by all. However, the incidence of rickets is still greater than it need be. Whatever the explanation may be, the fact remains that the incidence of rickets is still too great and will continue to be until some cheap, generally available, agreeable source of vitamin D is provided. Vitamin D milk seems to offer promising possibilities of meeting these requirements. (Jour. A. M. A., November 25, 1933, p. 1728)

Vitamin C Therapy.—In the majority of cases, guinea-pigs maintained on a diet deficient in vitamin C will develop ulcerative lesions of the intestine, if fed daily doses of tuberculous sputum. If this deficiency diet is supplemented by an adequate amount of tomato juice (vitamin C), however, the animals almost invariably remain free from intestinal tuberculosis. Since the guinea-pig and man are apparently identical in their vitamin C requirements, McConky and Smith of the New York State Hospital for Incipient Pulmonary Tuberculosis conclude that tomato juice therapy has a verifiable rationale in certain forms of clinical tuberculosis. (Jour. A. M. A., November 25, 1933, p. 1731)

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AMEBIC DYSENTERY

REPORT OF CASE WITH DISCUSSION OF TREATMENT

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The incidence of recognized amebiasis has dramatically increased since the report^{1,2} of several foci of infection in Chicago. Many visitors to the Century of Progress Exposition from widely separated cities and towns have developed amebic dysentery traceable directly to food handlers in hotels and restaurants in that city. At the present writing there have been reported many fatal^{3,4} cases, death being in some instances due to error in diagnosis or to inadequate treatment. Because of the difficulty encountered in attempting to arrive at a correct diagnosis, and because of certain unusual manifestations, the following case is presented.

CASE REPORT

First Admission: J. R. M., a man aged 39, vice-president of a lumber company, was seen July 25, 1933 for a routine physical examination. The history was unimportant save for an attack of "food poisoning" which had occurred three weeks earlier, attributed to dietary indiscretion. This illness continued for two weeks and was characterized by abdominal pains and diarrhea, for which he was given treatment.

Physical examination was essentially negative aside from tenderness over the re-

gions of the cecum and left descending colon. The patient stated that the tenderness had been diminishing since the intestinal upset. Proctoscopic examination revealed an injected rectal and lower sigmoid mucosa which was interpreted as being the result of the aforementioned enteritis. Blood examination, physical and chemical, gave normal figures. The sedimentation rate was normal. Studies of the urine and feces were not remarkable although the stool contained numerous undigested meat fibers. X-ray examination of the gastrointestinal tract showed rapid passage of barium but nothing more. All of these positive findings were regarded as the result of the recent enteritis brought about by "food poisoning". The recorded clinical diagnosis at this time was gastro-intestinal irritation with hypermotility. He was given a bland diet and discharged July 26.

History Of Interval: The patient was seen on two occasions between his first and second admissions. On August 3, one week after beginning the bland diet, he reported for examination stating that he felt much improved. There was no subjective complaint and the tenderness of the abdomen was less. It was thought that the sigmoid and rectal mucosa showed definitely less injection. On August 6, the patient made a 200-mile automobile journey to the Gulf coast, following which he noticed cramping abdominal pains, nausea, foul smelling diarrhea and slight fever. During the next five days he became quite weak. From 15 to 20 stools were passed daily and he had associated colicky pains throughout his abdomen. Bismuth and paregoric were taken without appreciable benefit.

Second Admission: August 11, fifteen days after the first admission and five days after onset of diarrhea, physical examination showed the patient to be acutely ill. The temperature was 102 F., pulse rate 110. He was perspiring freely. The abdomen was distended and tense but without

1. Bundesen, H. N., and Fishbein, W. I.: The Health Hazard of Amebic Dysentery, J. A. M. A. 101:1636 (Nov. 18) 1933.

2. Tonney, F. O.; Haeft, G. L., and Spector, B. K.: The Threat of Amebiasis in the Food Handler, J. A. M. A. 101:1638 (Nov. 18) 1933.

3. Lund, C. C., and Ingham, T. R.: Four Fatal Cases of Unsuspected Amebiasis: J. A. M. A. 101:1720 (Nov. 25) 1933.

4. Scannell, D. D.: A Fatal Case of Amebic Dysentery: Preliminary Report, New Eng. J. Med. 209:1171 (Dec. 7) 1933.

demonstrable rigidity. Marked tenderness was elicited over the right and left lower quadrants of the abdomen. The white blood count was 22,000 with 88 per cent polymorphonuclears. The urine contained much albumin, numerous red blood cells, leukocytes and moderate numbers of coarse granular casts. The stools were dark, semi-solid and foul smelling. Mucus and slight traces of blood, not admixed with the stool, were present. Examinations of warm specimens made in the hospital and in a private laboratory did not demonstrate amebae or cysts. Proctoscopic examination revealed an intensely injected mucosa and a single petechial spot at the junction of the sigmoid and rectum. Microscopic examination of material obtained directly from this area did not show amebae. It was thought that the patient had a rather fulminating type of food poisoning, or possibly some mineral poisoning because of the marked urinary findings. A surgical consultant believed a sigmoiditis was present due to dietary insult. Castor oil, 60 cc., was given and an ice bag applied over the region of the sigmoid. Next day the patient seemed much improved. The temperature and pulse were normal. The abdominal distention and tenderness were less marked. The white blood count was 14,000 with 80 per cent polymorphonuclears. The urine showed less albumin, fewer red blood cells and casts. Phthalein excretion was 50 per cent at the end of one hour. Total non-protein nitrogen was 42 mg. per 100 cc. of blood. On August 17, six days after admission, the patient felt quite well and had no symptoms referable to the abdomen. The stools were normal as regards number and consistency. The white blood count was normal. The urine showed a slight trace of albumin and an occasional hyaline and granular cast. Blood sedimentation rate was rapid. Proctoscopy revealed a less marked injection of the mucosa but whereas there had been a single petechial spot there now presented ten or twelve such spots. Bedside examination of material obtained from several of these areas did not demonstrate anything remarkable. In view of what was considered diligent search for amebae, failure to demonstrate them was taken as a strong urge against the diagnosis of amebiasis. Two days later, August 19, the patient was

up and about, eager to return to his party on the coast. Clinically the patient was considered entirely convalescent. A medical consultant thought that the patient was rapidly overcoming a rather overwhelming type of food poisoning. It was believed that the urine would soon become normal and that the "flea bitten" appearance of the rectal mucosa was in no wise significant enough to warrant further hospitalization. Ferric ammonium citrate was prescribed for his mild secondary anemia, a bland diet ordered, and the patient discharged August 19.

History of Interval: The day following discharge, the patient undertook a 200-mile automobile journey as passenger. During the latter stages of the trip he experienced slight abdominal discomfort, increasing to cramp-like pains throughout his abdomen. Upon arriving at his destination he had fever, nausea, and diarrhea. There was considerable tenesmus for the first time. Drenching sweats made their appearance and no urine was voided for 12 hours. He was returned by ambulance on August 21, two days after discharge.

Third Admission: Upon arrival the patient appeared seriously ill. He was apathetic and the skin was hot and moist. Temperature 103 F. The pulse rate was 120. The abdomen was greatly distended and protective spasm was manifest. Attempts to palpate the abdomen provoked great pain. As no urine had been voided for 14 hours, catheterization was done and 45 cc. of dark "grape juice" urine obtained. There was much albumin, numerous red blood cells, leukocytes and casts of practically every description. The white blood count was 32,500 with 92 per cent polymorphonuclears. The stools were dark, watery, foul smelling and contained much mucus and moderate amounts of blood. Proctoscopy revealed numerous well defined, small "punched out" ulcerations in the lower sigmoid and upper rectum. These ulcers had a red margin and greyish base. Three days earlier these lesions were petechiae. Material from one ulcer revealed numerous motile amebae with incorporated red blood cells. Stool examination showed numerous motile amebae.

Chiniofon, 1 gram (15 grains), was given orally, and emetin hydrochloride, 0.065

gram (1 grain), was given subcutaneously. The chiniofon was given every eight hours in one gram doses for one week. Emetin injections were given nightly for four days. Twenty-four hours after receiving specific therapy the patient was entirely relieved of his abdominal pains. The abdomen was soft and the tenderness much less marked. Urine was voided which contained less albumin and formed elements. Bowel movements became less frequent and tenesmus ceased. On the third day the white blood count had fallen to 17,000 with 84 per cent polymorphonuclears. At the end of the seventh day the patient volunteered that he was "well". The urine was normal; the white blood count was 9,000 with 78 per cent polymorphonuclears. The stools were semi-solid but normal in number. Total non-protein nitrogen was 40 mg. Phthalein excretion at the end of one hour was 50 per cent.

During the second week of his hospital sojourn, amebicide therapy was not given. He was allowed up and about his room, was given a soft bland diet and ferric ammonium citrate for his anemia. Proctoscopic examination at this time revealed definite healing of the ulcers in the sigmoid and rectum, and the mucosa was decidedly less injected.

At the end of the second week the patient was, to all intents and purposes, entirely convalescent. Blood, urine and stool examinations gave normal findings except for a rapid sedimentation rate of the erythrocytes. This was not regarded as significant in view of the terrific recent insult to his kidneys, gastro-intestinal tract and blood forming organs.

On the fourteenth day another course of chiniofon was started, one gram being given by mouth every eight hours. On the fifteenth day a watery diarrhea developed but entirely unlike the previous stools and this was considered the result of the chiniofon. The dose was reduced to 0.5 gram ($7\frac{1}{2}$ grains) every eight hours and the loose movements ceased. During the next four days the rectum and sigmoid assumed an essentially normal appearance. The patient was free of all symptoms and he was discharged on September 8, eighteen days after admission.

History Of Interval: September 15, one week after discharge the patient was again seen. He looked well. He was taking chiniofon in varying amounts up to 1 gram, three times daily. This variation was suggested because of the tendency of the drug to provoke watery stools. The abdomen was soft and not tender. Proctoscopic examination showed an essentially normal sigmoid and rectum. No ova or cysts were demonstrated in the stool. The urine was normal. Phthalein excretion showed 50 per cent at the end of one hour. The hemoglobin had risen from 66 per cent to 76 per cent during the previous three weeks. The white count was 7,750 with 76 per cent polymorphonuclears. The sedimentation rate was still extremely rapid but because of definite clinical and other laboratory signs of improvement, no importance was attached to this.

September 25, the patient was again seen and appeared much improved. Blood and urine studies were normal. Proctoscopy was not remarkable. Stool examination did not reveal anything significant. The patient was taking chiniofon, 0.5 gram, at irregular intervals in an effort to obtain the prescribed total amount without provoking a chemical diarrhea.

On October 9 and October 25, the patient was again examined and appeared perfectly normal, aside from the secondary anemia which was responding to iron therapy. A persistently rapid sedimentation rate was noted.

Fourth Admission: November 3, the patient came in complaining of mild abdominal distress and frequent stool evacuations which he did not attribute to the drug. The abdomen was soft but tenderness was present over the region of the cecum and transverse colon. Proctoscopic examination did not show anything considered significant. The white blood count was 10,000 with 80 per cent polymorphonuclears and the urine was essentially normal. The sedimentation rate was rapid as at previous determinations. A warm stool passed in the office showed some mucus but no gross blood. Microscopic examination revealed motile amebae with ingested red cells.

The patient did not feel that he was ill enough to enter the hospital and requested that he be allowed to return to his home

town for further treatment. He was instructed to take chiniofon in the usual dosage and keratin-coated pills of emetin bismuth iodide were ordered. He returned home to be treated further by his local physician. A letter from the patient on December 7, stated that he felt well and was attending to his duties restrictedly.

DISCUSSION

The features of interest in connection with this case are (1) repeated failure to demonstrate amebae by proctoscopic examination and warm stool studies although amebiasis was suspected; (2) marked amelioration of clinical symptoms following bed rest without amebicide therapy; (3) profound urinary signs of kidney damage which abated during treatment; (4) the persistent rapid sedimentation rate of the red blood cells throughout the observed course of illness and after all clinical and other laboratory manifestations had disappeared; (5) recrudescence of the disease while so-called "recommended" doses of an amebicide were being taken; and (6) observation of amebic ulcer formations from single petechial spots to numerous definite and classical lesions without the amebae being recognized.

It is not usual for such definite clinical signs and symptoms of amebic dysentery to be unassociated with positive identification of amebae when such diligent search has been instituted. However, the majority of recently reported cases having their origin in Chicago are noteworthy for the failure to reveal amebae. It is not easy to believe that laboratories throughout the United States would uniformly fail to detect amebae when searched for but the repeated failures are significant.

The urine seldom shows the evidence of such overwhelming kidney impairment, according to available reported cases. In this instance the findings were such as to suggest an acute nephritis, possibly due to some mineral poison.

There is little mention of the value of the blood sedimentation rate in acute amebic dysentery but it is suggested here that this test may be of value in ascertaining the presence or absence of active amebiasis when all other methods and signs fail. This was the only observed constant phenome-

non throughout the period of observation denoting that all was not well.

Petechiae of the sigmoid and rectal mucosa, discovered during proctoscopy of a patient giving a recent history of gastro-intestinal disturbance, should occasion the consideration of possible amebiasis. Most lesions are seen when clearly defined ulceration has appeared.

This case suggests further consideration of what constitutes adequate therapy. Recrudescence of classical manifestations of amebic dysentery during a course of extra or supplemental treatment warrants this opinion. It is known that the prescribed treatment was received in this instance.

The recent reports concerning the outbreaks of amebiasis traceable to a sojourn in Chicago suggested inquiry as to whether this patient's illness could be related to a trip to that city. The patient replied that he visited in Chicago from June 13 to June 26, inclusive. He was registered at the "C" Hotel where he ate most of his meals. Supposing that the disease was contracted during his stay, and it is highly probable, the interval elapsing between the first day of his visit, June 13, and the initial clinical manifestation mentioned in the history (July 4) was 21 days. Therefore, it is fair to estimate the maximum period of incubation in this case as being 21 days, while the shortest incubation interval can be considered 8 days.

TREATMENT OF AMEBIASIS

The possible grave consequences of amebic dysentery, if unrecognized or undiagnosed until complications have appeared, will be fully appreciated after data, now being collected, are reported. Untreated or inadequate therapy of amebiasis makes for a serious condition. The above mentioned case report deals with a patient who received in excess of the usual prescribed amounts of an amebicide, but who unquestionably failed to obtain adequate treatment. It must be emphasized here that *it is imperative to distinguish calculated from adequate dosage in treating amebic dysentery*, just as must be done when administering digitalis for congestive heart failure. Just what constitutes an adequate amount of any amebicide must be determined in each instance. Embarrassment of the phy-

sician, and perhaps grave consequences for the patient, may be averted if this is borne in mind.

Of course, it is agreed that prompt diagnosis is by and large the most important single factor related to treatment, but a survey of the recently reported cases originating in Chicago reveals noteworthy difficulties encountered in many instances. From such reports, and the above case, the following dictum seems to the writer entirely justifiable: *Every patient suspected of having amebic dysentery should receive immediate and adequate treatment, repeated negative laboratory reports to the contrary notwithstanding.* If treatment is delayed in a suspected instance because of failure to find amebae, the patient's well-being is jeopardized. I do not doubt that subsequent reports concerning the recent outbreak will add to the already mounting toll of deaths, some of which could have been prevented had the therapeutic test been employed instead of withholding treatment during the search for a positive laboratory diagnosis.

Immediately after the diagnosis is suspected or established the patient should be put to bed. Abdominal distress and discomfort from whatever nature are diminished by bed rest. Activity within the abdomen is lessened and this is most desirable in amebic dysentery.

The diet must be of a liquid nature for the first few days and only the smallest amounts compatible with adequate nourishment and maintenance of body strength are allowed. Thus, the intestinal tract is spared from further activity. Strained fruit juices, clear broths, carbonated drinks and milk, containing a tablespoonful of lime water, are given during the first four days. After the acute symptoms have abated somewhat, whole milk or malted milk preparations containing the whites of eggs are allowed. By the end of the first week the symptoms should have subsided sufficiently to allow the addition of semi-solid foods, such as milk-toast, mashed potato with butter, simple puddings, tapioca, etc. As convalescence progresses the patient is gradually given an increasing amount of bland articles. It must be emphasized here that those foodstuffs with considerable residue are to be avoided for several weeks after apparent clinical recovery. Furthermore,

condiments and seasoning should be strictly prohibited for an indefinite period. Alcohol is mentioned only to be condemned because of its notorious capacity for aggravating intestinal diseases.

In considering drug therapy it is well to remember that most of the so-called specific amebicides are highly toxic when given in large doses. Therefore, it is necessary that the patient remain in bed during the period of drug therapy regardless of the apparent state of being. The patient should be watched closely for symptoms and signs of intolerance to emetin and acetarsone especially, if these drugs are used.

Chiniofon: This is a synthetic iodine preparation containing approximately 28 per cent iodine. Two tradenames for this drug are anayodin and yatren. There is perhaps no better amebicide than chiniofon. In fact, it is generally agreed by observers such as Craig⁵ to be far more efficient in eradicating amebiasis than are the emetin preparations. It is certainly less toxic than either of the commonly used emetin derivatives. Chiniofon is prepared in keratin-coated pills of 0.25 gram (4 grains) each. It may also be obtained in powder form. The usual recommended treatment consists in the administration by mouth of 4 such pills three times daily for one week or ten days, followed by cessation of the drug during the second week and repeating the initial course during the third week. It not infrequently happens, as mentioned in the above case report, that a chemical diarrhea is provoked by this drug. This is more apt to happen if the patient is up and about as is frequently the case during the third week of treatment. Should diarrhea occur the drug should be reduced one-half. It may be found advantageous to administer chiniofon by the combined oral and rectal routes. An admirable method is as follows: The patient is given one-half the usual dose, 0.5 gram (7½ grains), by mouth three times daily, combined with a warm enema once daily (preferably at night) consisting of 200 cc. (7 ounces) of a 2 per cent solution of chiniofon. This combined treatment is kept up for a week or ten days. Should diarrhea develop the enema is discontinued and oral treatment kept up

5. Craig, C. F.: Amebiasis, in Musser: Internal Medicine, 1932, p. 241.

in 1 gram (15 grains) doses three times daily. The writer is of the opinion that chiniofon gives more uniformly good results than any other preparation in the treatment of amebiasis.

Emetin Hydrochloride: This has long been used and regarded as a specific and effective remedy for amebiasis. Certainly emetin gives prompt symptomatic relief in the acute and distressing types of amebic dysentery. Craig⁵ states that after emetin is started the patient is quickly relieved "within a few days after beginning treatment, but it is doubtful if it actually cures more than one-third of the cases treated, even if repeated courses are administered". This statement from such a recognized authority should receive due consideration of those physicians so confident that emetin hydrochloride alone is effective in eradicating the disease. This drug is administered orally or subcutaneously and should never be given intravenously or intramuscularly. A wise plan of treatment is to combine the oral and subcutaneous administration, giving 0.03 gram ($\frac{1}{2}$ grain) by mouth every evening, and 0.065 gram (1 grain) subcutaneously every morning, for ten consecutive days. Evidence of emetin toxicity is manifest by rather severe symptoms referable to the central nervous and cardiovascular systems. These should be closely watched for and should evidence of intolerance appear, emetin is stopped and chiniofon employed thereafter. Profound weakness is a prominent symptom of emetin intolerance.

Emetin Bismuth Iodide: This form of emetin is more efficient than emetin hydrochloride. It is prepared in keratin-coated pills for oral administration. The adult dose is from 0.1 gram to 0.2 ($1\frac{1}{2}$ to 3 grains) daily for 12 days. It is better to administer this drug at night, as nausea is frequently provoked for the first few nights, and diarrhea of a chemical nature may appear during the latter period of administration. These symptoms are not to be regarded as significant, however, and do not warrant withdrawal of the drug. As with emetin hydrochloride, the patient should be kept in bed during the entire treatment period and close watch kept for early signs of emetin intolerance.

Acetarzone, also known as *stovarsal*, is an arsenical preparation likewise employed successfully in treating amebiasis. It is available on the market in tablets of 0.25 gram (4 grains) each. This drug is more frequently used in the treatment of persons who have overcome their acute manifestations with chiniofon or an emetin preparation but continue to harbor cysts of amebae in the intestine. These so-called "carriers" are given one-half tablet (2 grains) three times daily for one week, instructed to omit the drug during the second week, and the course repeated the third week. Larger doses up to one tablet (4 grains) may be given but the patient should be watched closely for early manifestations of arsenical intolerance and the drug promptly discontinued if such occurs.

Craig⁶, in discussing the use of drugs as a prophylactic measure, states "I do not believe this should become a routine practice unless the feces contain cysts of *Endameba histolytica*. If a case of amebic dysentery occurs in a family I know no objection to the other members of the family taking a course of chiniofon, nor do I see any objection to anyone taking the drug who believes that he has been exposed to infection. However, as we all are more or less exposed daily, especially if we eat in public eating places, such a prophylactic use of the drug would not be practicable as one would have to take it continually".

NOTE: Since this report was written the author has seen a second patient who complained of abdominal distress, mild colicky pains and intermittent attacks of diarrhea of two weeks' duration. Examination revealed tenderness along the course of the colon. Material removed from a rectal ulcer showed numerous amebae. The stools also contained amebae in large numbers. This patient visited the Exposition in Chicago also and was registered at the "C" Hotel. She is receiving treatment at the present time but further data are not available for inclusion in this report.

6. Craig, C. F.: Personal Communication, Dec. 8, 1933.

Radiation Therapy in Acute Parotitis—Acute parotitis is rather an uncommon but dangerous complication following some surgical operations, especially on the colon. Mortality, according to various authors, ranges from 10 to 60 per cent. Irradiation applied early to these cases causes the process to subside within 24 to 48 hours, as a rule preventing suppuration.—Wilcox, *Texas State J. Med.*, Sept. '33.

INJURIES TO THE HEAD AND BRAIN*

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Severe injuries to the head are becoming more and more common. In the United States automobile accidents alone are responsible for thirty thousand deaths, and over a million major injuries every year. Five hundred thousand fractures are reported annually from industry, including thirty five thousand fractures of the skull. The fact that automobile accidents are largely on the highways, and in construction, forest and other activities at a distance from medical centers means that a doctor anywhere is apt to be called upon suddenly to manage a serious head injury.

The nature of the damage done to the cranium and its contents is determined by the mode of production. In a general way there are two kinds of injury, namely, (1) that in which a relatively small and rapidly moving object—hammer, monkey wrench, golf ball, etc., strikes against the head; and (2) that in which the head strikes violently against a flat and immovable surface, such as the ground, pavement, or post, etc., or is itself struck by a massive object.

In the first type the scalp is split or mashed apart. Further, if the force is sufficient, the skull at the point of impingement is bent in until it breaks, leaving typically a circular crack and quadrant fragments pushed into the cranial cavity—a “stellate” or depressed fracture, like a break in an egg-shell struck with a spoon. In this type of injury the meninges are apt to be torn; as are also, meningeal or cortical vessels if beneath the point of impact. The brain is contused or even lacerated but as a rule injury is limited strictly to the subjacent brain.

Since the brain involvement is limited rather than generalized, consciousness is not lost, or at most, only momentarily—“concussion”. Unless a motor, sensory or special sense area is involved, no neurologic changes are evident. These patients seldom show signs of increased intracranial pressure because of the absence of extensive edema, and the fact that the actual indentation of the skull is usually not so great that it cannot be compensated for. In

fact, marked pressure signs make one suspicious of intracranial hemorrhage or that the blow has been followed by a fall, striking the head.

The treatment of this type of injury seldom presents difficulty. The contused and contaminated scalp wound is excised under local anesthesia. Depressed fragments of bone are elevated, usually with temporary removal, allowing inspection of the meninges and brain for tears, clots and bleeding vessels. The gelatinous clots of meningeal hemorrhage are, of course, directly beneath the bone. Hemorrhage beneath the untorn dura is recognized by a blue, nonpulsating membrane. Blood beneath the cortex, when suspected by bulging or discoloration, may be discovered and evacuated by the gentle insertion of a blunt ventricular needle. Repair of the damage consists in closing the cortical vessels with silver clips, coagulation or muscle grafts; the bleeding meningeal vessels by coagulation or ligation with silk. The dura, if torn or opened, should always be sutured with fine interrupted silk sutures. The bone fragments if dirty should be washed in Dakin's solution, dirty edges cut off with rongeur and then replaced accurately to fill the cranial defect. There is no point in leaving out the bone fragments thus making a secondary repair with bone graft necessary.

Wounds treated by the method described heal by first intention almost invariably. Should suppuration follow, the scalp stitches may be removed and the loose bone easily lifted out. Closure of the scalp should be by separate suture of the galea and skin with fine interrupted silk. No drainage should be employed. The insertion of a drain is likely to defeat its purpose. Should blood, serum or pus accumulate beneath the scalp it can be readily detected and evacuated. The exception to closure of the dura and replacement of the bone is when the injury is in the temporal region and a dirty wound not present. Here the advantages of a decompression dictates leaving the dura widely open and the bone beneath the muscle out.

In cases where depressed fractures are elsewhere on the head and where the intracranial pressure is high, it is not advisable to provide for decompression at the site of repair. Usually the conservative means of

*Read to the Association in annual session, Montgomery, April 20, 1933.

controlling pressure are sufficient. However, if operative decompression is demanded, the standard Cushing subtemporal decompression should be done on the right side after closing the primary wound. In the choice of antiseptics for use in compound depressed fractures of the skull, needless to say, tincture of iodine, and other fixative alcoholic solutions should not be used on the tissues if they are expected to heal promptly. The skin surface may be cleansed with the usual preoperative technique, then the wound thoroughly irrigated and sponged out with Dakin's solution. When the wound has been debrided with a sharp knife and only Dakin's solution used in it, 95% will heal within three or four days just as a clean surgical incision. Needless to say wounds should be debrided within twenty-four hours or before inflammation develops.

In the second type, that in which the head strikes violently against a flat and immovable surface, such as the ground, pavement, or post, etc., or is itself struck by a massive object, the scalp is mashed against the skull, the skull itself flattens—the opposite poles approaching each other—just as in a golf ball when it is struck by the face of a club. When the limit of elasticity is reached in the particular skull, a crack or cracks result—the “linea” or “bursting” fracture similar to those in a pecan that is squeezed in a nutcracker. The damage done the brain by the sudden stop when the head strikes the pavement or the sudden displacement of the brain when the head is struck by a heavy object, may be visualized by recalling the soft, semisolid consistency of the brain. The area beneath the impact is thrown against the skull to be bruised or ruptured. The opposite pole flattens down and may rupture (*contrecoup*). However, of even greater importance is the fact that the entire brain is shaken up (*commotio cerebri*) resulting in greater or less dysfunction, and followed by a generalized edema leading to increased intracranial pressure of varying degree.

The crack in the skull is of no particular importance; in fact, it may be advantageous, allowing some expansion to take care of the increased pressure. It is only when the crack enters the nasal accessory sinuses or the cribriform plate or extends through the

temporal bone into the ear that serious consequences follow—meningitis, rhinorrhea or cerebral pneumatocele in the first case, and damage to the hearing, or very occasionally meningitis, in the latter. Where the crack is across a meningeal vessel a dural hemorrhage results.

However, the universal injury to the brain frequently produces profound shock, the patient is usually unconscious (since the left frontal lobe is also involved) and compression with its dangers and sequelae develops.

Whereas the treatment of the first type of head injury is a more or less simple mechanical affair, the management of this type injury presents many and often insurmountable obstacles to complete recovery, and saving life. Careful and thorough examination and frequent observation for the detection of serious signs and varying indications for interference are essential.

The treatment of shock needs no particular mention, except to observe that the use of 50% glucose by vein has the double advantage of taking fluids from interstitial spaces, particularly in the head, reducing intracranial pressure and preventing cerebral edema, as well as aiding in elevating the blood pressure by drawing these fluids into the circulation. If wounds are present, placing hemostats on bleeding vessels alone should be resorted to, attempts to cleanse and suture the wounds being left until shock has been recovered from. In this type of injury the nature of the scalp wound is usually contusion and requires no treatment. The same is true of cracks or linea fractures.

Obviously nothing can be done to remedy the contusion of the brain nor the minute tears and hemorrhages due to “sloshing”. Our efforts must be directed towards the care of the unconscious patient, the correction of the pathologic physiology, as far as possible, and control of the increased intracranial pressure.

It is so common to see a cyanotic, comatose patient lying on his back filling the air with the noise of his stertorous breathing, while the anoxemia of his brain increases the cerebral edema, deepens the coma and cripples the vital centers, heart and respiratory muscles, whose activity in compensation is his only hope of recovery, that a de-

tailed description of management is justified.

In these cases it is not necessary to hold up the jaw, pull the tongue forward or use a metal airway in order to prevent obstruction to inspiration. By simply turning the patient on his side, with the face tilted slightly down, the air passages will be cleared, the snoring stopped and the color brightened, which means restoring adequate oxygen supply to the tissues. These patients must be kept warm but burns due to hot water bottles and electric pads avoided. The fluid intake should be adequate for the physiologic needs but may be kept as low as 1000 cc. a day with safety. Attempts to give semiconscious patients fluids by mouth are slow, troublesome and apt to lead to aspiration pneumonia. Fluid and medication can be easily given through a nasal tube, or by rectum. Rapidly given fluids in quantities by vein favor edema. These patients void in bed unless deeply unconscious, when catheterization is necessary. Extreme restlessness is sometimes caused by a distended bladder and relieved by emptying it. The use of drugs has not proven very successful in stimulating depressed respiration which is due to a damaged respiratory center, nor do the ordinary stimulants avail greatly in a falling blood pressure of central origin. Relief of pressure in the first instance and of anoxemia in both is about all that can be of direct benefit.

If the signs and symptoms of increased pressure are not present, the patient should be let alone and none of the following measures instituted unless and until indicated: Rest, quiet, elevation of the head and possibly an ice cap tend to avoid increased intracranial pressure or to correct slight increases. Disturbances with treatment, excitement, pain, being frightened, and held for lumbar puncture and x-ray, and morphine tend to increase it. Limitation of fluid intake, the use of hypertonic glucose solution intravenously, and dehydration by giving saturated magnesium sulphate solutions by rectum reduce edema of the brain and withdraw fluid from the cerebrospinal spaces, thus having a direct effect in lowering the increased pressure.

If these measures are insufficient, lumbar puncture performed without frighten-

ing the patient, using a small caliber needle and allowing the fluid to escape slowly, also has an immediate effect. However, this is not the panacea which some of the recent literature suggests. In the first place, after the free fluid has been withdrawn it is replaced in the cranial cavity frequently by increased bulk of the brain from edema, or by epidural or subdural hemorrhage. (The content of the cranial cavity being fixed, the variation is only in relative quantity of the contents.) In other words, the cranial cavity tightly filled with swollen brain and blood clots is not benefited by lumbar puncture. There is also danger of herniation of the cerebellum through the foramen magnum causing respiratory death. This is much more likely to occur where fluid is allowed to escape rapidly through the needle or in too great quantity.

Operative decompression, usually a right subtemporal decompression, leaving both the dura and arachnoid open, is occasionally necessary. The actual amount of increased space provided is of limited benefit, but the fluid which is allowed to escape through the open membranes into the tissues is of marked and continued benefit. The suspicion of epidural hemorrhage may add to the indication for decompression since it permits ligation of the middle meningeal artery and removal of the clots.

Following coma and unconsciousness a period of restlessness and delirium is common and may be extreme. The avoidance of physical restraint, relief of pain and the use of certain drugs and hydrotherapy are helpful. Opiates, in addition to increasing intracranial pressure, are relatively ineffective in brain injuries, but occasionally pantopon will quiet a patient better than other drugs. In general, the use of bromides, chloral and the barbitals are best. There is danger of the continued use of barbitals keeping up the mental disturbance.

Occasionally, due to being thrown from a car or falling from a height and striking upon some sharp or projecting point, or in cases where one is struck on the head with a heavy, relatively sharp object, such as an ax or tire tool, we have both types of injury present in the same patient. The skull is dented in, and a bursting crack and shaken up brain complicate the picture.

In addition to the two common mechan-

isms of head injury, there is a third, a rarer type, due to the head being struck a glancing blow or being dragged against the ground. In this class of cases the scalp is pushed until it tears—usually across the eyebrow line—partially or completely avulsing the scalp. The skull is bare since the periosteum strips from the bone more easily than the periosteum strips from the galea, or the galea from the skin. Due to the fact that the force is indirect and glancing, the skull is not damaged either by indentation or by cracks, nor is the brain severely damaged due to lack of direct violence. Transient concussion symptoms alone are present as a rule.

Here treatment consists merely in cleansing the wound and replacing the scalp. The scalp flap is turned back. Hair, dirt and other foreign material are removed mechanically. Dirty grooves on the skull, from scraping against gravel, etc., are curetted thoroughly and the whole wound is washed and antiseptized by pouring Dakin's solution from a pitcher held at a height sufficient to flood out the minute particles of contamination. The use of strong antiseptics is particularly to be avoided here. The scalp is then replaced, the galea and skin being sutured separately as usual and care being taken to replace the face contact of the tear accurately, using the eyebrows as a guide. No drain is inserted. The scalp is held in place by atmospheric pressure and in my experience has only failed once to re-adhere without even being floated up with serum.

Special mention should be made of chronic subdural hematoma. The history is of a slight head injury, such as falling in the bath room or being thrown from a horse, usually without immediate serious symptoms. The physics of this condition is as follows:

The head strikes against some flat surface, possibly even a soft surface. No apparent damage to the scalp, skull or brain results. However, the brain sags away from the skull tearing one of the veins which crosses to the superior longitudinal sinus or its tributaries. This allows slow and intermittent venous hemorrhage into the space (normally potential) between the dura and the arachnoid. Here the blood accumulates, eventually over an entire hemi-

isphere or even both hemispheres since the condition is frequently bilateral. As the hemorrhage continues intermittently over a period of weeks the intracranial pressure increases causing headache, stupor, vomiting and choked discs but with surprisingly few localizing signs, due, no doubt, to the softness and diffuseness of the accumulated clots and fluid. The diagnosis is usually suspected from the history and proven by a burr opening of the skull. These patients are usually cured by simple evacuation of the clots and the brownish fluid. I usually make a perforator and burr opening in the frontal and in the occipital regions, and a small subtemporal decompression defect, inserting a wick drain of rubber tissue at this point. The arachnoid is of course not opened.

Cerebrospinal rhinorrhea and cerebral pneumatocele are so rare that their management is of little interest. In both instances the patient should be forbidden to blow his nose and contact with persons having colds should be avoided. No attempt should be made to irrigate the nose with antiseptics. Closure of the torn dura and bone opening should be accomplished as soon as possible if accessible.

DISCUSSION

Dr. C. K. Weil (Montgomery)—I want to refer briefly to one case recalled to my mind by the last picture shown by Doctor Semmes, the one in which there was a fracture of the cribriform plate with air in the cranial cavity. Last December I saw a man who had a fracture of this type. It was obscure at first because of the fact he had a rather large fracture in the occipital region of his skull. He had rhinorrhea which started on the second day after the injury. On the ninth day he blew his nose and complained of severe headache. The next day his temperature had risen to 102, and his neck was stiff. Within thirty-six hours he had developed a typical spinal meningitis.

This type of infection occurring after fractures of the skull which open the cranial cavity in communication with a sinus, the nose or an infected ear, is a very serious complication and when the infecting organism is a pneumococcus the death rate runs well over ninety per cent, or rather did until a few years ago. Recovery in this case occurred after the use of 180,000 units of concentrated pneumococcus serum intravenously and 50,000 units intraspinally. The number of recoveries reported in the literature is only about fifty.

The paper which we have heard is extremely interesting and we are glad to number Dr. Semmes among the many distinguished speakers who have added to our pleasure and enlightenment at this meeting.

ASTHMA*

PERSONAL OBSERVATIONS ON FIFTY-FOUR CASES

By

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Though the impression is widespread that the determination of the cause of a given case of asthma is based exclusively on the results of skin tests, it cannot be emphasized too strongly that the skin testing is only one step in the study of a case, that positive reactions may be of no importance, and that finally the skin tests are of value only when taken in conjunction with the facts brought out by a carefully taken history. Table I gives an outline of the history form being used in our practice.

Of our cases, 48 occurred among white people and 6 among negroes. We do not believe that this represents an accurate idea as to the relative frequency of the disease in the two races since negroes are less likely than white people to apply for treatment from a private physician. In 13 of our cases the first attack occurred in the first decade of life, in 10 in the second decade, in 11 in the third, in 8 in the fourth, and in 11 after the fortieth year of age. In one case the distress had its onset in infancy and in another at 60 years of age. The time which has elapsed from time of onset of symptoms until the date of the consultation determines to some degree the complications of the case and its prognosis. The longer the patient has suffered with asthma, the larger is likely to be the number of substances to which he is sensitive. The longer the duration of symptoms, the greater is the likelihood of emphysema, chronic bronchitis, bronchiectasis, chest deformities and clubbed fingers. The earlier the age of onset the more likely is the deformity of the chest to be extreme.

The occupation and hobbies of the individual largely determine his contacts. The stableman's asthma is likely to be due to horse dander; the baker's to wheat dust; the jeweler's to cuttlefish bone; the cotton-mill worker's to cotton seed; the druggist's to ipecac or lycopodium; the farmer's to the

danders or feathers of any of the domestic animals. The huntsman may have symptoms due to dog dander, the spinster to parrot or canary feathers.

The presence of other allergic manifestations adds weight to the suspicion of the allergic nature of the attacks. Asthma was complicated by hay-fever in 36 of our cases, by eczema in 7, by urticaria in 4, and by angioneurotic edema in 1. Attacks which occur three to five times a year are likely to be due to animal emanations. One of our patients had attacks only when she visited her grandmother and slept on a feather mattress. This type of case can often be relieved simply by avoiding contacts with the offending substances. Five of our patients had attacks almost every night and one had never been free of asthma for a period of nearly fifteen years. These patients with almost continuous asthma or daily attacks are more likely to have pulmonary infections and are the most difficult types to cure. It is in this type of case that lipiodol intrabronchially gives the best results. Nine patients in our series had seasonal attacks and these responded well to treatment. Two patients had attacks following an excess dose of extract in the course of treatment for hay-fever.

The duration of attacks bears a certain relation to their frequency—the more frequent the attacks, the longer their duration. Patients with multiple sensitizations or house dust sensitization, as well as those complicated by pulmonary infection, have attacks of longer duration. Patients whose attacks have a seasonal incidence are, as a rule, sensitive to pollens but the feather and house dust cases are almost invariably worse in the winter time and cases due to hairs may be seasonal, if the habits of the individual afford greater contact at some particular time of the year.

Table II gives a list of the important pollens in the vicinity of Montgomery with the dates indicating the time of year when each pollen is in the air. Patients with pollen asthma generally have hay-fever for two to three weeks before the asthma begins. In those cases due to grass pollen, symptoms may be present from April until frost. For testing with grass pollens we use timothy, rye, bermuda, blue grass, Johnson grass, corn, broom grass, water grass, meadow

*Read at a meeting of the Chattahoochee Valley Medical and Surgical Association, Radium Springs, Ga., July 11, 1933.

TABLE I

NAME _____ AGE _____ HISTORY NUMBER _____
 ADDRESS _____ OCCUPATION _____
 DATE _____ RACE _____

COMPLAINTS:

Hay-fever—Age of onset _____ Seasonal relation _____
 Frequency _____ Duration _____
 Sneezing _____ Blockage of nostrils _____
 Nasal discharge _____ Character of discharge _____
 Sinus trouble _____ Running of eyes _____
 Itching of eyes _____ nose _____ mouth _____
 inside of ears _____

Asthma—Age of onset _____ Seasonal relation _____
 Preceded by nasal symptoms _____ Frequency of attacks _____
 Duration of attacks _____
 Relation to time of day _____ Cough _____
 Sputum _____ amount _____ character _____
 Itching between shoulder blades _____
 Wheezing _____ Pneumonia _____
 Bronchitis _____

Eczema—Age of onset _____
 Seasonal relation _____
 Suspected cause _____

Hives—Age of onset _____
 Suspected cause _____

Angioneurotic edema— _____

Headache—Age of onset _____
 Suspected cause _____

Indigestion— _____
 What foods upset _____

Urinary frequency— _____

2. FAMILY HISTORY:

Hay-fever _____ Hives _____
 Asthma _____ Epilepsy _____
 Eczema _____ Migraine _____

3. IMMUNIZATIONS:

Tetanus antitoxin—effect _____ Horse serum _____
 Diphtheria antitoxin _____ Transfusion _____
 Diphtheria toxin-antitoxin _____

4. PAST HISTORY:

Whooping cough _____ Frequent colds _____
 Influenza _____ Tonsillitis _____
 Bronchitis _____ Ear infection _____
 Pneumonia _____ Sinus infection _____
 Empyema _____ Tuberculous infection _____
 Plourisy _____ Hemoptysis _____
 Croup _____ Diphtheria _____

Operations:

Appendectomy, tonsillectomy, nasal operations, sinus operation _____

Accidents:

Tetanus antitoxin given? _____

fescue, barnyard grass and finger grass. This list represents only a small proportion of the number of grasses found in this county. A two-plus reaction with corn pollen is so common that we disregard any but the most striking reactions. For treatment of the grass patients, we use a mixture of timothy, rye, broom grass and meadow fescue pollen.

All allergists stress the familial nature of asthma. In 33 cases in which this was in-

vestigated a family history of some allergic disease was present in 80%.

Five children in our series had had immunization with some type of horse serum prior to their first visit to our office. Their parents were cautioned about repeating the serum without adequate preliminary desensitization. Two of these children later had tetanus antitoxin and both had anaphylactic reactions in the form of asthma and urticaria.

Many patients state that their asthma followed some acute respiratory infection. Three cases followed lobar pneumonia, 1 whooping cough, 3 influenza and 4 measles. Bronchitis or bronchopneumonia preceded 2 cases. It seems doubtful that these respiratory infections actually caused the asthma, but it is well known that after the onset of the asthma, an attack may be precipitated by any respiratory infection.

Operations performed for the relief of asthma are in our opinion useless except under exceptional circumstances. One of our patients had had a resection of his thoracic sympathetic nerves without relief, and one had had a submucous resection of the nasal septum without relief. Polyps had been removed twice with relief of the nasal obstruction. We feel that the polyps are a result rather than the cause of the asthma. A few surgical procedures were advised by us. In one case a streptococcus isolated from the tonsil had produced large skin reactions and tonsillectomy was performed. The asthmatic symptoms were relieved temporarily but recurred. There were, however, other foci of infection in the teeth and they were extracted. In another case an abscessed tooth was removed not for its effect on the asthma but for its general effect. In a third case a therapeutic abortion was performed because of the marked interference with breathing. Our attitude toward operation for removal of foci of infection is that it will have no bearing on the asthma but will improve the patient's general health.

Table III, an outline of the physical examination form used by us, gives only the essential features of the examination. Cyanosis, clubbed fingers, chest deformity and malnutrition accompany cases of long standing. The pale edematous mucous membrane of the nose, typical of allergic conditions, helps to confirm the diagnosis.

TABLE II

SPECIES	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.
Elm			XXXXX	XX							
Hackberry			XXX	XX							
Oaks		X	XXXXXX	XXX							
Hickory			XXXXX	XXX							
Pecan			XXXXX	XXXXX	X						
Black Walnut			XXXXX	X	XXXXXX						
Grasses			XXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXX	
Cocklebur								XXXXX	XXXXXX		
Marsh Elder								XXX	XXXXXX	XX	
Ragweed								XXX	XXXXXX	XXXX	

TABLE III
PHYSICAL EXAMINATION

GENERAL APPEARANCE:		
Temperature	Weight	Nutrition
Cyanosis	Dyspnea	Chest deformity
Clubbed fingers		
NOSE:		
Color of mucous membrane	Pinched	
Obstructions	Polyps	
Appearance of discharge	Excoriation of nostrils	
THROAT:		
Tonsils—evidence of infection		
Teeth—abscess, pyorrhea		
Maxillary glands		
CHEST:		
Type of breathing		
Wheezing	Rales	Emphysema
Gross appearance of sputum		
HEART:		
Blood pressure		
ABDOMEN:		
Scars		
SKIN:		
Eczema	Hives	

We have found the following types of chest deformities: kyphosis of the dorsal spine, Harrison's groove, barrel-shaped chests, and pigeon-breasted chests. There is frequently a limited expansion during respiration with marked retraction in the supra-sternal and supraclavicular fossi.

Table IV shows the essential laboratory tests. The average blood count in our series was 11,000 with 9% eosinophils and 2% basophils. The white cell count varied between 6,200 and 16,500 with the combined eosinophils and basophils ranging from 3% to 22%. In those cases where pulmonary infection was present, the white cell count was high with a preponderance of neutrophils and a low percentage of eosinophils.

TABLE IV

White cell count	Eosinophilia
Urine	Wassermann test
Sputum—Differential count	
Culture	
Tubercle bacillus	
Test meal	
Stool—Ova	Parasites
Nasal Discharge—Differential count	
Tuberculin test	
X-rays—	
Teeth	
Sinuses	
Lungs—Tuberculosis, emphysema, unresolved pneumonia, bronchial fibrosis, enlarged hilar lymph nodes, thickened pleura	
Skin tests	
Effect of adrenalin	

Table V gives a list of the various animal emanations and inhalants with some of the common sources of contact and with figures indicating the number of times we encountered positive cutaneous and intradermal reactions. It is significant that feathers rarely gave positive cutaneous reactions. The same is true of orris root. The hairs and other inhalants generally gave positive reactions on cutaneous testing. House dust is uniformly used by intradermal route.

Table VI shows the frequency with which positive reactions were found using the various pollens. The foods and moulds gave an occasional reaction but these never seemed to play an important role in the production of symptoms.

Table VII gives a list of foods used for testing. These foods are arranged in botanical groups and whenever a positive reaction is found with one member of the group, the patient is instructed to abstain from eating any of the other members of that group.

Table VIII shows the causes of asthma in our entire series. These figures do not correspond with the figures showing positive skin reactions for the reason that positive reactions may be positive and yet the substance not be the cause of asthma. This statement does not mean that the skin tests are necessarily inaccurate but rather that the positive reaction may indicate some past

TABLE V

1. FEATHERS

C	I	
2	15	Chicken
2	7	Goose
1	2	Duck
		Turkey—pillows, mattresses, quilts
		Parrot
		Canary
		Pigeons

2. HAIRS AND DANDER

3	3	Horse—used riding habit, furniture, coats, mattresses
1	1	Dog—fur, chinese rugs
2		Rabbit—fur, imitation fur, gloves, felt hats
2	1	Cat—furs, carriage robes, toy animals
1	1	Camel—coats, scarfs, oriental rugs
2	1	Cow—stuffing for furniture, ozite, plaster
1	1	Goat—mohair furniture, rugs, wigs, shawls
		Sheep—wool fabrics, rugs
		Hog—brushes, plaster, furniture stuffing
		Mouse—laboratories and stables
		Guinea pig—laboratory workers and breeders
		Deer—stuffed heads, skin rugs
		Human—barbers, manicurists

3. INHALANTS

		Silk—cloth
1	5	Orris Root—cosmetics, scented soap, dry shampoo, tooth powder
		Fish Glue—envelopes, stamps, book binding
2	2	Flaxseed—linseed oil, mustard plaster, breakfast food, baby chick feed
1		Cottonseed—cooking oils, fertilizer, cattle feed
1		Kapok—pillows, mattresses
1		Pyrethrum—Insect sprays and powder
		Henna—hair dye
		Tobacco—cigarettes, cigars, pipe tobacco, snuff
		Castor Bean—fertilizer
		Jute—rope, bags, cotton bagging
		Straw—hats, baskets
		Corn Shucks—mattresses
	34	House dust

sensitization or the material giving the positive reaction may be the cause of allergic symptoms other than asthma. In an occasional case skin reactions were negative and yet the history pointed conclusively to a definite substance as the cause of symptoms. In one case of summer asthma, tests with grass pollen were negative, but treatment with grass pollen gave excellent results. The case of moose hair asthma was diagnosed not because of skin tests, since these were not done, but on the basis of the appearance of asthma in three widely separated places where stuffed moose heads were present and its absence at all other times. The table emphasizes the importance of house dust and the relative infre-

TABLE VI

C	I	
	1	Elm
2		Oaks
5		Hickory
6		Pecan
2		Black Walnut
2		Poplar
2		Cottonwood
2		Willow
1		Ironwood
5	6	Grasses
1		Pigweed
1		Amaranth
1	1	Cocklebur
7	2	Ragweed

quency with which the foods have played a part in our series. It demonstrates the frequency with which multiple sensitization is encountered and stresses the necessity of complete skin testing. In regard to the frequency with which we found house dust to be the main cause of symptoms, it should be stated that the extracts which we use are

TABLE VII

MILK		
EGG WHITE		
VEGETABLES:		
Onion	Lima Bean	Pumpkin
Garlic	Kidney bean	Squash
Asparagus	Lentil	Cantaloupe
Beet	Peanut	Cucumber
Spinach	String bean	Watermelon
Radish	Parsley	Lettuce
Turnip	Celery	Artichoke
Cabbage	Carrot	Sweet potato
Cauliflower	Tomato	Okra
Mustard	Irish potato	
Pea	Egg plant	
CEREALS:		
Wheat	Buckwheat	Corn
Rye	Oat	
Barley	Rice	
FRUIT:		
Apple	Plum	Cocoanut
Pear	Peach	Pineapple
Almond	Lemon	Banana
Cherry	Orange	Grape
Apricot	Grapefruit	
MEATS:		
Chicken	Lamb	
Beef	Pork	
SHELL FISH:		
Crab	Oyster	Shrimp
FISH:		
Codfish	Mackerel	Trout
Sea bass	Herring	
Tuna fish	Salmon	
NUTS:		
Walnut	Pecan	
BERRIES:		
Blackberry	Strawberry	Raspberry
MISCELLANEOUS:		
Coffee	Pepper	
Cocoa	Horse radish	

highly concentrated and are made from specimens of dust taken from the patient's own home. We feel that these two factors are largely responsible for the good results which come from treatment with house dust extracts.

We have experimented with a large number of drugs in the treatment of asthma and feel that very few are of real value. Adrenalin is the most valuable drug. Its action is both prompt and effective. It has the disadvantage of being effective only when given by hypodermic and its effect lasts only from one to three hours. Large doses possess a very definite disadvantage. Three minims in a child and five in an adult should be sufficient. Doses of one cc. should not be given. Any dose which produces tachycardia and nervousness is too large. If injected into an area which has been used frequently for hypodermic medication, its absorption is retarded and its effectiveness diminished. In cases where subcutaneous injection is without effect, it may be given intramuscularly or diluted with saline and given intravenously but doses by the latter route should be less than the average dose.

Ephedrine sulphate in doses of $\frac{3}{8}$ to $\frac{3}{4}$ grain by mouth for adults is almost as effective as adrenalin and though its effect is obtained slower, it lasts longer. It can be repeated at three to four hour intervals. Taken at night before retiring it may prevent attacks. We have seen no reason for combining it with sodium amytal.

TABLE VIII

CAUSES OF ASTHMA IN OUR SERIES:

Pollen	11 cases
Pecan	4
Grass	3
Ragweed	4
House dust only	17 cases
House dust with other factors	11 cases
House dust and food	1 case
House dust and feathers	1 case
House dust and flaxseed	3 cases
House dust and hairs	2 cases
House dust and pollens	3 cases
House dust with more than one substance	1 case
Feathers only	4 cases
Moose hair	1 case
Overdosage in treatment	2 cases
Flaxseed intradermal test	1 case
Streptococcus	4 cases
Cardiac	1 case
Following horse serum	2 cases
Unknown	3 cases

In the cases with pulmonary infection potassium iodide seems to be of definite value. It will not relieve an attack. It is given between attacks to loosen the sputum. We employ a dose of 10 to 15 grains three times a day. Cough syrups with a little codeine may be indicated to relieve the coughing that follows an attack of asthma. Most asthma cigarettes and powders contain stramonium. Old negroes on the plantation mixed Jamestown weed (Jimson) and smoked this in a pipe for relief.

We never use morphine. Not only do we consider it ineffective but in addition we are afraid of habit formation. We have seen no good results from atropine. Benzyl benzoate has been ineffective in relieving the bronchial spasms. We have seen no good results from calcium by mouth or intravenously, from peptone intravenously, from nitro-hydrochloride acid by mouth nor from the much vaunted 1/1,000 hydrochloric acid intravenously.

Such simple remedies as mustard plasters and steam inhalations may be effective in relieving the cough and thinning the sputum. Nasal sprays of ephedrine or adrenalin may relieve the accompanying nasal symptoms but do not relieve the asthma. We have been very much impressed with the use of lipidol given intratracheally for the relief of those cases with a complicating bronchitis. 10 to 20 cc. should be given at a time and the instillation should be checked by fluoroscopic examination.

Two of our most striking results came from the removal of contact with the offending substance. One case was due to chicken feathers and the other to moose hair. In all cases, even when desensitization is used, we advise removal of contact in so far as possible. The case due to orris root is advised to use an orris-free powder. The patient with symptoms due to feathers is advised to use cotton or kapok pillows. The patient whose symptoms are due to pyrethrum is advised to avoid "Flit" and other insect sprays and powders. The patient who is sensitive to house dust is advised to keep away from the house while it is being swept and to keep his room as free of dust as possible.

Specific desensitization is the mainstay in the treatment of asthma. We select as

the initial dose 0.1 cc. of that solution which is just weak enough to fail to produce a skin reaction. The dose is increased gradually at intervals of three to five days depending upon its effect on the patient. As the dose is increased the interval is also increased. The object is to get a dose large enough to protect for two to three weeks and to continue the treatment with that dose and at that interval. If at any time a certain dose causes asthma, that dose is too large and the next one should be smaller. Hives or vasomotor rhinitis also indicate that the dose is too large. A local reaction consisting of redness and induration larger than an inch in diameter and edema of the skin over the inner side of the elbow also indicate that the dose is too large. It is impossible to outline any schedule of dosage which will be satisfactory for all patients. Each patient must be treated as an individual problem and the size of the dose and the interval between doses must be determined on the basis of the reaction to the preceding dose.

No claim of permanent cures can yet be made. We estimate that results are satisfactory in about 80% of the patients. The relief which some obtain is startling while others show no improvement whatsoever. The results on the whole are sufficiently encouraging to justify a statement that careful study, avoidance of contact with offending substances, specific desensitization and the judicious use of drugs will afford marked relief in a majority of patients who up to the present have considered their condition as nearly hopeless.

Treatment of Diphtheria—There is a specific treatment for diphtheria in antitoxin, and when a sufficient amount is given at the beginning of the disease there should be a cessation of the disease. Antitoxin neutralizes the toxin that is given off and has no direct effect on the bacillus itself. There is no harm in having a large amount of antitoxin in the blood stream or tissues; therefore, enough antitoxin should be administered to completely neutralize the toxin that is present. A large dose will not do any harm, but may do a great deal of good should there be more antitoxin needed than is anticipated.—*Sutton, Virginia M. Monthly, October 1933.*

ACUTE APPENDICITIS COMPLICATING PREGNANCY AND THE PUERPERIUM*

By
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In discussing acute appendicitis as a complication of pregnancy and the puerperium it is my desire to aid in and to emphasize the importance of early recognition of the condition. If diagnosed early and properly treated, the majority of cases will be of little moment, compared with the undiagnosed and delayed cases.

The first authentic case receiving modern treatment was by Munde in 1894, followed in 1912, by Finley, who reported a case of his own and referred to fifteen additional cases which had been reported by other surgeons.

The cause of the disease is the same as in the non-gravid individual. Baer, *et al*, found, in a series of seventy-eight pregnant individuals who had never had anything that might be called appendicitis, that the appendix rotated counter-clockwise. At about midterm the appendix pointed medially, and by the eighth month occupied a vertical position. This fact, I think, is calculated to interfere with the normal blood supply, and hence enter into the field as at least a contributing cause.

The symptoms differ in no wise from those in the non-gravid patient. The pain may be a little higher in the epigastric region, and the point of soreness above McBurney's point. The pains and abdominal soreness may be more general, in that the inflammatory condition of neighboring structures may excite uterine contraction.

The physical findings are about the same as those seen in the usual case. There may or may not be muscle spasm; likewise rigidity is variable. The detection of a mass is much more difficult, as one would expect in advanced pregnancies. The laboratory findings are not so helpful as in the usual case in that there is a high total leukocyte count in pregnancy. The differential count is of greater assistance. The urinary findings also are not of great value. For instance, if there is a pyelitis or cystitis, the

presence of pus would suggest that it is a kidney complication rather than appendicitis. However, the absence of pus would be of great assistance.

Most often the complication is found in the earlier months of pregnancy. Statistics are quite misleading as to the frequency of the disease. From an obstetric standpoint it is known to occur about once in twenty-five thousand cases, while from a surgical standpoint its occurrence is much higher. One man reports one in seventy-two cases of acute appendicitis. That one in five hundred pregnant women should develop appendicitis does not seem far afield. Personally, I have not attended twenty-five thousand obstetric cases; yet, in more than five hundred appendectomies which I have performed I have had two cases. Moreover I have had two referred to me by a physician who has had some five thousand deliveries.

A number of things have to be considered in recognizing appendicitis in the gravid individual. In pyelitis and stricture of the ureter, a positive finding of pus or of a stricture would be confusing, while, on the other hand, a negative finding would be of assistance. An ovarian cyst with a twisted pedicle would have to be considered. In this the pain is lower than the usual site of the appendix, and of a more continuous character, and followed early by a mass that increases in size quite rapidly. Pyosalpinx should not be confusing in that a negative history, plus negative findings at the usual examination in early pregnancy would eliminate this complication. Degenerated fibroid tumors and infected dermoids of the ovary also may have to be eliminated. A negative finding for abdominal tumors at the early examination of the pregnant woman, plus the history, should in most instances eliminate these abnormalities.

The treatment is the same as in the non-gravid case; that is, an appendix that you would ordinarily feel was not urgent may be postponed in pregnancy, but greater vigilance should be exercised in this type of case than in the non-gravid individual, if operation is delayed. In a recent letter from Dr. John Erdman, he emphasized the importance of operating on all cases where diagnosis of acute appendicitis had been made, regardless of the outcome of preg-

*Read at a meeting of the Northeastern Division of the Association, Talladega, July 11, 1933.

nancy. The same attitude is taken by a number of other surgeons who have written on the subject. Briefly, when a diagnosis of appendicitis has been made, and the patient does not improve in a few hours, and has a rising temperature and increasing pulse rate, and there is an increase in the polymorphonuclear leucocytes, operation should be done without further delay. In the event the patient has not been seen early and a diagnosis not made until the appendix has become gangrenous or ruptured, immediate operation is of course imperative.

In the early months of pregnancy, say up to five or six months, patients should be treated as in ordinary cases. In the latter months of pregnancy one's diagnostic ability, skill and judgment will be taxed to the utmost. Not only must you consider the patient's condition from a standpoint of the immediate illness, but due consideration must be given her from the obstetric angle. The condition of the kidneys, blood pressure and heart action must be noted. In studying the literature bearing on this type of case one is impressed with divergence of opinion of different surgeons as to procedure. To illustrate this point, let me make the following references:

In an article a few years ago, Cocke and Mason advocated cesarean section, followed immediately by appendectomy. Their case was gangrenous, and there was no general peritonitis or inflammation about the uterus. Mother and baby both lived.

Grattan reports a case of gangrenous appendicitis in a patient in the first stages of labor. Appendectomy was performed, followed within a few hours by delivery of a normal baby. Mother recovered after a stormy convalescence, her chief illness being due to cardiac embarrassment occasioned by the toxicity associated with the appendicitis and a previous renal dysfunction. The baby at birth had a lusty cry and to all appearances would survive, yet it died a few hours later from what was thought to be cardiac failure and toxicity associated with the gangrenous appendicitis.

Barber and Miller report another case of acute appendicitis, not gangrenous, occurring during labor and in which operation was performed. Despite every effort to stay the progress of labor, the patient was

delivered in a few hours without untoward sequelae. Both mother and baby lived.

Ficklen reports a case treated ultra-conservatively perhaps. His patient evidently had had appendicitis before becoming pregnant with recurrences at six weeks, at six months, and at seven and one-half months of pregnancy. After a delay of two days he did an appendectomy, and at the operation the patient was found to have gangrenous appendicitis. Three days later a normal infant was delivered. Both mother and child are living.

Wilson of Brooklyn advocates a Porro operation in cases of appendicitis in the late months of pregnancy, when the uterine muscle and adnexa are acutely inflamed, and where the muscle shows evidence of gangrene. In cases without marked involvement of the uterine wall he believes the classical cesarean should be done, followed by appendectomy.

B. H. Rose reports a case who had had frequent attacks of appendicitis undiagnosed during this pregnancy, and who was having an attack when first seen by him at the seventh month. He, together with consultants, was unable to make a diagnosis. Five days later the patient was delivered of a viable fetus, living only ten minutes. For the next forty-eight hours the patient was quite well, then she suddenly began having nausea with vomiting. The finger tips became cyanotic, the temperature 103, and the pulse 116. Diagnosis of probable ruptured appendix was made. On operation this was found to be true. There was also marked inflammatory involvement of the structures in the right lower quadrant and the fimbriated end of the right tube was closed. The tube contained pus. Drains were placed at strategic points. After a stormy period of five days the patient began to improve and finally recovered.

Mrs. C., aged twenty-five, about two months' pregnant, primipara, was referred by Dr. W. M. Salter. Preoperative diagnosis of acute appendicitis was made and confirmed on operation. The patient made an uneventful recovery and was delivered of a normal baby at the end of pregnancy.

Another case referred by Dr. Salter was that of Mrs. H., twenty-eight years old, two months' pregnant. A diagnosis of acute appendicitis was made and verified at opera-

tion. The patient was delivered at full term of a normal baby.

Mrs. A., aged thirty years, my own case, about four months' pregnant, multipara, was taken ill the day before I saw her with paroxysmal pains in the abdomen. Thinking that it was perhaps a threatened miscarriage, nothing was done about it until the following day when I called and found all evidence pointing to a ruptured appendix. She was operated upon, the ruptured appendix removed and drainage instituted. Recovery followed. She was delivered at full term of a normal baby.

These three cases all occurred during the early months of pregnancy. I now wish to report another case, a primipara. It is my belief that the patient was having an attack of appendicitis during delivery.

Mrs. I., aged twenty-eight, a week before admission to the hospital, at the usual examination, was found to have a trace of albumin in her urine. Treatment was instituted with the result that the urine became free of albumin. About a week later there was a reappearance of the albumin in the urine and in greater amount. According to the count, her time was up, so, rather than delay, it was determined that labor should be induced. The patient was sent to the hospital; under ether anesthesia the cervix was dilated and a catheter introduced into the uterus. About two hours later she began having regular uterine contractions. The pains persisted overnight but there was no engagement even though there was complete dilatation of the cervix. She seemed to have an unnatural tendency to protect herself during the contractions. Finally, at eight o'clock the next morning, under ether anesthesia, instruments were applied and she was delivered of a full-term normal baby. In the afternoon she called my attention to a soreness in her right iliac fossa. On examination there was no muscle spasm, no rigidity, no mass, but a sensitiveness. The following day she had elevation of temperature, the pulse rate was increased, there was moderate distention and slight nausea. The second day all of the symptoms previously mentioned were greatly magnified. On the third day nausea was quite annoying, the abdomen was markedly distended, and there was general tenderness over the entire abdomen. On the

fourth day, on the morning visit, I found her still very ill and distended, even though there had been a bowel movement the previous day. She was vomiting a dark fluid, and in general had all the appearances of a very sick woman. At four o'clock in the afternoon of the fourth day she had an intense pain in the lower abdomen after which no gas was passed from the bowel. The nausea greatly increased at this time and she began vomiting fecal matter. The blood count showed a marked increase in polymorphonuclear leukocytes. Diagnosis of intestinal obstruction resulting from peritonitis, due to an accidental infection at delivery, was made. It was determined that an enterostomy should be done. An incision to the left, and high, was made and a brownish pus-like fluid escaped. At this point the diagnosis was changed to that of a ruptured appendix. The enterostomy was done and a stab wound made in the lower abdomen and drains inserted. There was a free flow of thick white pus from the lower incision. She had a stormy convalescence. Gastric lavage, by means of a Lyon tube through the nose, was resorted to. Normal saline with glucose was given by hypodermoclysis, and sufficient morphine to induce rest. In about three days improvement was noted, the patient making a good recovery ultimately. All treatment, after the institution of drainage, worked perfectly. The lavage gave great relief from the nausea and the enterostomy allowed a constant escape of gas and intestinal contents; the saline and glucose kept her supplied with the necessary amount of water, etc.

The follow-up of this patient will be of interest to surgeons in that, though the patient was apparently well, there was continuous drainage from the sinus at the drainage site, the sinus closing and opening repeatedly. Moreover, there was a profuse leukorrhea. We determined to see just where this sinus led to, with the idea of correcting it. On injecting a suspension of barium and glycerine in water it was found that the sinus connected with the cecum via the appendix at the site of rupture, about an inch from its base. At this site, found at operation, also was attached the fimbriated end of the tube. The appendix and tube were removed, the patient made an uneventful recovery and the leukorrhea disappear-

ed. It is my belief that there was a certain amount of discharge passing through the tube as well as to the surface of the abdomen by way of the sinus.

In conclusion, I would like to emphasize the importance of a close watch on obstetric cases for this complication, and, in the event a diagnosis is made, institute, or have instituted, proper treatment.

All women who have had a definite attack of appendicitis should be operated upon before becoming pregnant.

Avoid radical surgery in case of gangrenous and ruptured appendices in the late months of pregnancy and during labor. Accouchment force in the multipara, cesarean section in the primipara, and if the condition of the patient is good, let them go on to delivery in the normal way. These are certainly to be preferred to a Porro, despite the condition of the uterine wall and adnexa.

BIBLIOGRAPHY

Baer, J. L., Reis, R. A., and Arens, R. A.: Appendicitis in Pregnancy, With Changes in Position and Axis of Normal Appendix in Pregnancy, *J. A. M. A.* 98:1359-1364, April 16, '32.

Barber, D. N., and Miller, J. R.: Acute Appendicitis During Labor Operations: Recovery, *Boston M. & S. J.* 193: 720-721, Oct. 15, '25.

Cocke, N. P., and Mason, J. M.: Management of Acute Appendicitis Developing in Latter Weeks of Pregnancy, *J. A. M. A.* 75: 95, July 10, '20.

Ficklen, E. A.: Appendicitis in Latter Weeks of Pregnancy, *New Orleans M. & S. J.* 78: 146-152, Sept. '25.

Rose, B. H.: Acute Appendicitis Complicating Last Trimester of Pregnancy; Report of Case With Old Appendiceal Abscess and Review of Literature, *M. J. & Rec.* 135: 524-528, June 1, '32.

Wilson, Robert A.: Acute Appendicitis Complicating Pregnancy, Labor and Puerperium, *Surg. Gynec. Obst.* 45: 620-628, Nov. '27.

The Toxicity of Dinitrophenol.—It has been shown that dinitrophenol enormously accelerates cellular metabolism, and it has been proposed that the substance be used clinically in the treatment of conditions in which acceleration of the metabolic rate may be of value. The Council on Pharmacy and Chemistry of the American Medical Association in its preliminary report emphasized, however, the limitations to and the possible dangers from the clinical use of this drug and urged that it be used only under strictly controlled conditions.—*J. A. M. A.*, Sept. 30, '33.

CONSERVATIVE TREATMENT OF CONVULSIVE AND NON-CONVULSIVE TOXEMIA*

By
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In the last and most perilous period of pregnancy there is recorded a vast though singular group of complications which, if not recognized early and properly treated, may lead to grave and permanent damage¹.

Despite the progress made in recent years in curtailing the ravages of toxemia of pregnancy, it is still in second place in the triad of conditions chiefly accountable for obstetric pathology. The assumption formerly prevalent, that an intoxication once expressing itself as pre-eclampsia, or its terminal phase eclampsia itself, in one pregnancy, seldom, if ever, left signs of its behavior to appear in the next, is now regarded as fallacious. Why a disease so violent, affecting nearly all the vital systems of the body, should be charged with adopting such an abnormal course is difficult to comprehend. Of all the grave hazards arising in pregnancy, toxemia is foremost, and as a cause of permanent disability it probably is exceeded only by septic infection.

The conditions embraced in the term pre-eclampsia, eclampsism and eclampsia, are for the most part susceptible of prevention. It is generally conceded that more than 75%, if not nearly all, of the cases can be prevented. This consummation may be accomplished by the zealous practice of antenatal care. It is common knowledge that the rigorous application of antenatal study has largely overcome all forms of toxemia in institutional practice¹. Every effort and energy should be directed toward improving the mother's general health, always observant for the slightest change from the normal course¹. Greater watchfulness is imperative if the family history presages trouble; for example, if the mother had eclampsia, if the parents were neurasthenics, or alcoholic—these indicating a hereditary

*Read at a joint meeting of the Elmore and Tallapoosa County Medical Societies, Lake Martin, July 11, 1933.

1. DeLee, J. B.: *Obstetrics and Gynecology, Practical Medicine Series*, Chicago, The Year Book Publishers, 1932.

instability of the nervous system which may lead to disorders of metabolism, especially during the crucial test of pregnancy. A painstaking inquiry must be directed toward any history of renal damage. All foci of infection should be eliminated. Modern obstetrics demands that there should be no change in the general condition of the mother's health following delivery, irrespective of the complications encountered.

Although the advance¹ in our knowledge of the treatment of the toxemias has not been marked, one thing is becoming plainer and more insistent, namely, that routine classical cesarean section is the worst of all treatments. The eclamptic patient is a poor surgical risk; she bears the anesthetic poorly, has a lowered resistance to infection, and is prone to shock and hemorrhage. The liver and kidneys are always damaged but the thing that makes radical procedure hazardous is that after one convulsion the myocardium is damaged. No patient is a good surgical risk who has a pulse rate of 120.

Perhaps the only real improvement in our treatment to date is due to the fact that greater attention is paid to the water balance in the system. The newer hypnotics, luminal, amytal, and pernocton, which have replaced morphine to a great extent, also have reduced the general mortality. This is not due to any specific effect they have in curing the disease, but to the fact that they stop the convulsions and thus allay the alarm of the attending accoucheur. He is not so readily precipitated into disastrous interference. He feels that the case is not so threatening and can take time to administer glucose and magnesium sulphate and let nature take its course.

The terms pre-eclampsia and eclampsia² are unsatisfactory in that they specify varying clinical manifestations in the same state which in the common recurrent condition are mutually replaceable by the term toxemia. When we think of eclampsia we think of a fulminating toxemia, which is due to gradual or possibly a sudden increase in concentration and accumulation of the toxins of the pre-eclamptic patient. Therefore, our treatment should be directed

toward (1) the prevention of this accumulation and (2) the dilution and elimination of the toxins once they have accumulated.

Glucose in concentrated doses comes nearer being a panacea than any other drug on the market. It functions³ both as a supportive measure and as an ideal therapeutic measure to maintain the patient through the long period of shock. Glucose supplies energy, dilutes the poison, produces a renal diuresis, relieves cerebral edema, produces dehydration, and replaces depleted glycogen of the liver.

It is not the purpose of this paper to discuss the treatment from the etiologic standpoint, neither do we classify our treatment according to whether we are dealing with a nephritic, cardiovascular, hypertensive or hepatic toxemia.

There are many forms of treatment for the convulsive state which are worthy of consideration, but we are presenting but one, which has been in use at the Chicago Lying-In Hospital for a number of years. If, in spite of the hygienic rules laid down for the patient, the symptoms of non-convulsive toxemia develop; if the blood pressure begins to rise; if there is a sudden increase in body weight due to water retention, a diminished urinary output, with frequency; albuminuria, slightly accelerated pulse, headaches, numbness and tingling of the fingers, lassitude and malaise, treatment is immediately instituted.

The patient is put to bed and must have absolute rest. She should not have visitors to tell her how Mrs. Jones got along when she was affected like that. Mental rest is imperative and is best secured by the proper application of sedatives. Sodium amytal is our most popular drug at this time, given in 3-grain doses, and may be repeated as often as necessary to produce rest. In order to relieve water retention in the tissues and to lessen the load on the kidneys, excretion by the bowels is to be encouraged. This is best brought about by saline purges, alternating with a vegetable cathartic. A salt free, non-protein diet is indicated until the symptoms subside. A salt free diet has a dehydrating effect which reduces the blood pressure by decreasing the quantity of the

2. Solomons, B.: Some Phases of Toxemias of Pregnancy (Joseph Price Foundation Lecture), *Am. J. Obst. & Gynec.* 25:172-186, Feb. '33.

3. Althausen, T. L.: Dextrose Therapy in Diseases of Liver, *J. A. M. A.* 100: 1163-1167, April 15, '33.

blood and tissue fluids, thereby relieving the edema. A diet rich in carbohydrates is essential; this is readily available in the form of fruit juices, cereals, custards, milk and vegetables, with dextrose added as required. Carbohydrate therapy² reduces the working load of the liver. It also corrects metabolic derangements due to hepatic insufficiency and aids in detoxication, especially if the toxins are unknown, as they are in toxemia of pregnancy, and can not be eliminated otherwise. An untiring interest must be directed to the following points: blood pressure curve, intake and output, the pulse, the body weight and any unusual subjective or objective symptoms that may develop. A twenty-four hour specimen of urine should be measured and examined. With improving conditions, the patient may gradually return to the normal diet, containing not too much meat or fluids and little salt. One to two days each week should be set aside as vegetable days. As stated above, carbohydrates are always the food of choice.

The patient⁴ that has once shown the slightest evidence of toxemia, regardless of how well she responds to treatment, should be seen at frequent intervals and kept under close observation. If the patient runs a slow but progressive course with symptoms gradually increasing, chronic nephritis or low kidney reserve is to be thought of and treatment intensified if possible.

In many of these cases at or near term, especially multiparas, labor may be induced medically. Our procedure is as follows: The patient receives 2 ounces of castor oil before breakfast, and, as soon as the bowels begin to move, quinine in 5-grain doses is given every half hour for three doses. If the pains are weak, they may be stimulated by the use of a hot soap-suds enema. Should the pains subside, no harm has been done and the patient has been thoroughly purged. The presence of toxemia favors successful induction and you will be surprised to see most of them go into labor and may be delivered immediately without complications. There are many methods of induction, but possibly the above is the safest method.

Frequently we are called out to see a patient for the first time and find her sitting up in the living room, complaining of the following symptoms: headache, seeing colored lights, twitching of the muscles, somnolence or insomnia, nausea and vomiting, pain in the epigastrium, with a generalized edema of the body, and frequent urination with a marked decrease in the output. Nausea and vomiting usually herald the great storm that is brewing by only a few hours.

Occasionally we have a patient, with whom we have carried out the most judicious treatment, develop the same symptoms in spite of all our efforts at proper care. The treatment for these patients is the same as convulsive toxemia and will be discussed under that heading.

There is no obstetric complication that gives the accoucheur more concern than convulsive toxemia. When the doctor is called in to see the patient, frequently she is at home and the visit is the first opportunity afforded to make a prenatal examination. Upon arrival he finds the entire neighborhood present and in a state of utter confusion and disorder. The doctor walks in and immediately sets about the task of securing a proper atmosphere for the sick patient by sending all the neighbors home. If there ever was a time when a doctor needed to radiate confidence, intelligence, skill, and ability, it is now. Without further delay, $\frac{1}{4}$ -grain of morphine is administered. Colonic irrigation with 50% magnesium sulphate and two ounces of glycerine is given. This is followed by gastric lavage with sodium bicarbonate solution, two ounces of saturated solution of magnesium sulphate being introduced before the removal of the tube. Magnesium sulphate 25% solution, 10 cc. intramuscularly and 5 cc. after each convulsion, is given until under control, or morphine sulphate $\frac{1}{4}$ -grain, repeated every three hours until respirations become ten to twelve per minute.

It is obvious that throughout most of our discussion we have ignored the pregnancy by treating the disease instead. Now we are confronted with the problem of delivering a living baby with the least amount of trauma and operative interference. At the conclusion of the above treatment, the

4. Bland, P. B.: Prevention of Maternal Injury Incident to Pregnancy and Labor, From Standpoint of General Practitioner, J. A. M. A. 99: 1937-1941, Dec. 3, '32.

doctor will ask himself the following questions: Is the patient in labor and if so how long before she can be delivered? Can we expect a normal spontaneous delivery without injury to the child? Is there any complication other than the convulsive toxemia present? What is the position of the child? Much of this information may be gathered from a careful rectal examination. If we find that the cervix is effaced and dilating, the head engaged and in normal position, and the fetal heart tones good, we may stand by, continuing the above treatment until the baby is delivered. However, if rectal examination reveals no effacement and no dilatation, the patient should be sent to a hospital. Some of these patients will be delivered on the way to the hospital since toxemia predisposes to rapid delivery.

Upon admission to the hospital the patient should be put to bed, with feet elevated, in a private room, free of visitors, and with a competent nurse in constant attendance. She should be instructed as to the following treatment: The patient is to receive nothing by mouth, nor is she to be subjected to unusual manipulation. Further, the patient must not be allowed to bite the tongue; saliva must be wiped away from the mouth. Morphine, $\frac{1}{4}$ -grain, is to be administered every three hours until the respirations drop to ten or twelve. 500 cc. of 20% glucose should be given immediately and every four hours until the intake and output are balanced and the patient is able to take the required amount by mouth. Magnesium sulphate (50% solution) may be administered in the form of a retention enema, not more than 100 cc. being used every six to eight hours. Gastric lavage may be used to relieve nausea and vomiting, sodium bicarbonate solution being very effective. Before the tube is withdrawn two ounces of saturated magnesium sulphate solution may be introduced. A catheterized specimen of urine is collected and sent to the laboratory immediately for complete chemical and microscopic examination. Blood pressure readings should be taken every few hours. The baby's heart tones should be listened to frequently and any change noted.

In a short while the patient regains consciousness. The treatment should be con-

tinued, however, until the required amount of fluids, nourishment, etc., may be taken by mouth. Frequently the patient goes into labor immediately and is delivered without complications.

As an illustration I would like to report the following: Primipara, aged 17, thirty-two to thirty-four weeks pregnant, was admitted to the hospital at 11:00 A. M. Convulsions had begun at 4:00 A. M., the same day. She was brought to the hospital in a Ford touring car lying across the lap of her father and husband, having convulsions at frequent intervals throughout most of the trip. Examination revealed a blood pressure of 190/90 and a pulse of 120. The patient was quite cyanotic; extremities showed a generalized edema; a catheterized specimen of urine showed many red blood cells, few pus cells, few hyaline casts and 3+ albumin. Abdominal examination revealed pregnancy, apparently of about thirty-four weeks duration, position right sacro-anterior, fetal heart tones 140. A most intensive therapy of concentrated glucose, magnesium sulphate by rectum, and morphine by hypodermic was instituted. In two hours time the patient had regained consciousness, was able to take fluids by mouth and was seemingly comfortable. Her blood pressure had dropped to 140/90 and her pulse to 90. The treatment, while not so intensive, was kept up through the next day and at 5.00 P. M. the following day the patient was delivered spontaneously of a 4½ pound baby boy. The patient continued to improve, making an uneventful recovery, being discharged from the hospital on the tenth day.

Case 2: A primipara, aged 19, thirty-eight to thirty-nine weeks pregnant, was admitted to the hospital on January 18, 1933, unconscious and having frequent convulsions. Blood pressure was 118/90 and the pulse 110. Urine showed 1+ albumin and an occasional pus cell. Abdominal examination revealed a thirty-eight weeks pregnancy in a left anterior position, fetal heart tones 150. Patient received the routine treatment of glucose, magnesium sulphate and morphine. Within a short time she regained consciousness and was able to take fluids and nourishment by mouth. The treatment was continued as the indications demanded. On the fourth day the patient

went into labor spontaneously and was delivered of a normal seven pound female infant. Progress was uneventful and on the twelfth day the patient was discharged from the hospital.

It is suicide for these mothers to continue to have babies; some reliable contraceptive measure should be given them. They should be instructed as to the hazards of frequent pregnancies. This type case should be followed for months following delivery. Upon each postnatal visit a thorough examination should be made of the urine, blood pressure, etc.

In conclusion, while we have no cure-all for toxemias, it should be said that antenatal study and application stand at the head of the list as the best means of prevention.

The liberal use of fluids, intravenous glucose, a rich carbohydrate diet, and proper sedation and elimination are generally conceded to be the most rational treatment.

A policy of symptomatic treatment judiciously employed and free from interference will yield the best results in most cases.

In the dissemination of the new deal, let us make a plea for the child-bearing woman. Let us as physicians erect a monument of such rigid antenatal study and care that even the noxious influences of toxemia cannot surmount. After all, our greatest moments of triumph are realized when we present the mother and father with a healthy living baby.

A HEALTH CALENDAR FOR 1934

(From *The Health Bulletin, N. C. State Board of Health, January 1934*)

1. Reduce the infant death rate.
2. Reduce the maternal death rate.
3. Extend organized health service to every county.
4. Increase the per capita consumption of safe milk.
5. Work for the day when no citizen shall suffer or die from a preventable disease.
6. Continue the efforts to completely eradicate pellagra and smallpox.
7. Immunize every baby in the State against diphtheria at six months of age.
8. Extend the benefits of approved sanitary facilities to include every rural home.
9. Provide competent prenatal medical service and medical care for all maternity cases.
10. Through regular and thorough medical examination and consistent medical care prevent untimely deaths from such killers as cancer, tu-

berculosis, and the many diseases of heart and kidneys.

11. Secure a more widespread system of medical supervision of the health of school children, with a more effective system of follow-up which will provide for the removal of all remediable physical handicaps; and care for every malnourished child in the commonwealth.
12. Strive for a health-minded population who will eventually realize the benefits of positive health, and who will be just as willing to pay for competent medical and dental service when needed to preserve good health as they are now ready to pay out money for any of the other desirable possessions of life.

Appendicitis—Treatment is operation when the diagnosis is made. This condition, when acute, calls for action, unless there be present a condition that renders operation very dangerous. In this connection I want to remind you that an appendectomy is a major operation. In my somewhat limited experience, and from the testimony of surgeons who daily perform this operation, there are circumstances and conditions that may make it a trying and difficult procedure. Experience, patience, the gentlest handling, and keen judgment, are the things that weigh heavily in the much to be desired end—life, and a reduction of the mortality rate.—*Longsdorf, Journal, Medical Society of N. J., September 1933.*

Iodized Oil in Bronchiectasis—The treatment of bronchiectasis has always been more or less unsatisfactory until recently. While iodized oil was being used for diagnosis it was found that those cases with bronchiectasis were greatly improved following an instillation of the oil. The cough was improved, the amount of expectoration was greatly diminished and the general condition of the patient improved. Oschner, of New Orleans, states that many cases of asthma with bronchiectasis are completely relieved of asthma for a long time after one instillation of iodized oil. As a therapeutic measure iodized oil should be instilled into the bronchial tree at one to two weeks intervals until expectoration stops or at least is greatly diminished and then at intervals as necessary to control the symptoms.—*Elliott, J. M. A. Georgia, Sept. '33.*

Postmenopausal Hemorrhage—Vaginal bleeding occurring after the menopause is a symptom of the utmost gravity and one that demands immediate investigation. In over two-thirds of all such cases appearing for diagnosis on the gynecologic service of the University of California the cause was found to be a malignant tumor of some portion of the genital tract. Almost half (49 per cent) of the total number had carcinoma of the cervix uteri. The benign causes were various, but could usually be readily determined by careful examination, including, if necessary, diagnostic curettage. In rare cases no cause could be established for the bleeding. Such women should always be kept under the closest possible observation, and, if necessary, be reinvestigated, but fortunately many of them are relieved merely by curettage.—*California & West. Med., Sept. '33.*

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AMEBIC DYSENTERY

Early in November the attention of the public, as well as of physicians, was directed to the occurrence of a large number of cases of amebic dysentery throughout the country with probable origin in Chicago. In many of these cases the diagnosis was not made until some surgical measures had been attempted, frequently with disastrous results. A report¹ from Chicago lists, to the first of December, 419 cases with 26 deaths, while, in addition, 384 carriers were located in the city through the examination of food handlers.

Amebic dysentery is, of course, no new disease, and, although primarily a disease of tropical countries, is not rare in temperate zones. Its exact prevalence in this country is difficult to determine as the finding of the *Endameba histolytica* is necessary for diagnosis. The disease is contracted by swallowing the parasites, so the usual method of spread is through food or water. On reaching the large intestine the parasites attack the intestinal wall, feeding largely on red blood cells. The resulting ulceration may give rise to the typical

bloody diarrhea, although probably most infected individuals never have marked symptoms. Abscesses in other body organs are common. Elsewhere in this Journal appears the description of one of the acute cases together with a discussion of treatment.

Lewis² has described the life cycle of the *Endameba histolytica* as follows:

"The organism has three forms or stages, (a) the motile, or vegetative or trophozooid stage, (b) the precystic, and (c) the cystic stage. The vegetative amebae live in the ulcerated areas of the colon and become pre-encysted in the stools when the latter are semi-solid. Only vegetative amebae are found in the secondary locations as the liver, lungs, et cetera. The amebae lose their motility and give up their contents, such as red blood cells, and become pre-encystic amebae when the stool is semi-solid. When the stool becomes formed or desiccated, the pre-encystic amebae develop into the cysts which perpetuate the species in new hosts."

The active amebae which cause the cases are unable to infect others because they die out shortly after they are passed with the bowel movement. The resting stages, the pre-cysts and the cysts, are the infective agents, and the cysts may remain alive under favorable conditions for several weeks. The active case of amebic dysentery usually does not excrete cysts, so it is the "carrier" and light case who are most dangerous. The carrier may exhibit no symptoms of the disease, but excretes the infective form of the parasite, frequently in large numbers. Craig³ states that from thirty to fifty per cent of carriers will present symptoms, not pathognomonic of the disease, but symptoms which should call for feces examination. Ordinarily these symptoms are overlooked.

Estimates as to the number of people infected with *Endameba histolytica* vary considerably, but all are agreed that the parasite is found in the stools of a considerable percentage of apparently normal people.

2. Lewis, Seab J.: Texas State J. Med. 27:316 (Aug.) 1931.

3. Craig, Charles F.: J. A. M. A., 98:1615 (May 7) 1932.

1. Communication from Dr. Herman Bunderson.

ple. Boeck and Stiles⁴ found 4.1 per cent of 8,029 examined. Wight⁵ reports 6.8 per cent of 1341, Faust⁶ twenty per cent of 460 individuals in a Virginia County. Meleney⁷ examined 4,987 individuals from twenty-two Tennessee counties and found 17.3 per cent infected. Craig³ estimates that from five to ten per cent of the population of the United States harbor the *Endameba*.

With this vast number of carriers one wonders why there are not more outbreaks of the acute disease. A partial answer may be found in the recent publications of Meleney and Frye,^{8,9} which indicate that different strains of *Endameba histolytica* may have different powers of infectivity and may differ in the amount of pathology produced. If this be true, the strain or strains emanating from Chicago evidently had high infectivity powers. Earlier workers were unable to find this differentiation in activity and pathogenicity. Faust¹⁰ in 1932 stated that "there is no detectable difference in susceptibility (of the dog) to human strains of an acute, chronic or carrier type."

In Alabama two deaths have been reported amongst cases having their origin in Chicago. The number who may have become infected, but without developing acute symptoms, will probably never be known. However, any person showing symptoms of an intestinal nature not explainable on other grounds should receive the benefit of a stool examination.

Control measures from the public health viewpoint are difficult and depend first of all on recognition. The diagnosis of infection with the *Endameba histolytica* cannot be made on clinical symptoms alone. The demonstration of the parasite in the feces is essential with the acute case, and, of course, much more so with the carrier. The

examination for the active amebae must be made on a fresh, warm stool, but the search for cysts can be made on older specimens. The Laboratories of the State Health Department are prepared to make the necessary examinations on properly submitted material. When found, all cases and carriers should be promptly treated and should be excluded from the handling of food. The routine examination of all food-handlers would be an ideal procedure, but one that the present facilities within the State will not permit. The education of the public as to means of spread and the dangers of an infected individual in the home will do much to curb home infection.

D. G. G.

RHEUMATIC FEVER IN THE SOUTH

Rheumatic fever is said to be a disease of cold, damp climates. It is rare in the tropics and seldom seen in the milder portions of the temperate zone. In southern hospitals a large number of patients are found with mitral stenosis, and often these persons give no history of previous rheumatic disease, even under close questioning. This would lead one to inquire as to the possibility that some other disease is responsible for the cardiopathy, that our diagnostic ability is at fault, or that the symptoms of rheumatic fever differ from the classical description of swollen, painful joints, flushed face, wandering inflammation that goes from joint to joint (more often the knee, shoulder and elbow), profuse sweats, sore throat, high temperature (101-104°) and rapid, soft pulse.

To rheumatic fever is ascribed the responsibility for forty per cent of cardiac pathology. McMillan and Nichols¹ feel that rheumatic fever is a disease with a multiplicity of manifestations and sites of involvement. They calculate that fully one-half of the cases of rheumatic fever occur without the patients being aware of the presence of the disease or seeking medical advice. The admission records of the Johns Hopkins Hospital² over a period of five

4. Boeck, W. C., and Stiles, C. W.: Bull. 133, Hyg. Lab. U. S. P. H. S., 1923.

5. Wight, Toynbee: U. S. Vet. Bureau, M. Bull. 2:557 (June) 1926.

6. Faust, E. C.: Am. J. Hyg., 11:371 (March) 1930.

7. Meleney, H. E.: J. Parasitol. 16: 146 (March) 1930.

8. Meleney, H. E., and Frye, W. W.: Am. J. Hyg. 17:637 (May) 1933.

9. Meleney, H. E., and Frye, W. W.: Am. J. Hyg. 18:543 (November) 1933.

10. Faust, E. C.: Am. J. Trop. Med. 12:37 (January) 1932.

1. McMillan, T. M., and Nichols, C. F.: Rheumatic Fever and Rheumatic Heart Disease, New Orleans M. & S. J. 84: 346-357, Nov. '31.

2. Longscope, W. T.: Variations in Manifestations of Rheumatic Fever in Relation to Climate, Ann. Int. Med. 5: 401-407, Oct. '31.

years show a rheumatism incidence in adults of 1.37 per cent, while the necropsy rate over a period of twenty-one years was 1.66 per cent. The disease is thus shown to be comparatively common in the South, especially in the region of Baltimore. Half of these patients gave no past history of rheumatic manifestations. Ninety-five per cent showed cardiac involvement, while only fifty-four per cent had arthritis at any time during the illness.

In children, the onset is more insidious than in adults. McLean³ has described these children as being pale, easily tired, with poor appetite and undernourished. Many complain of slight pains in the legs, feet or joints. There may be stiffness of the limbs or neck. Digestive disturbances with paroxysmal abdominal pains are frequent. There is a change of disposition. The children become irritable, nervous, peevish and are easily frightened. Often there is a failure in mental concentration; objects may be dropped; and writing may become difficult at times. There may be slight muscle twitching.

Examination shows an anemic child who is irritable, excitable, nervous, high strung and usually underweight. The second heart sound is accentuated, with a soft blowing systolic murmur heard over the apex, which may or may not be transmitted. When the murmur is detected in a patient who previously has not had it and when it remains constant for at least a month, during which time the patient has no elevation of temperature or acute infections, the diagnosis of rheumatic fever is almost certain. Often no murmur is heard, but the heart action is rapid and the apex pulse exaggerated. The joint pains are often called "growing pains" and no importance is attached to them by the laity. The average general practitioner in Alabama will see about one case a year in which the characteristic symptoms are presented; other patients will have a varying symptomatology.

Among the poorer classes, rheumatism is fifteen to twenty times more prevalent than among the well-to-do, who dress more warmly and are better fed. Malnutrition and mild toxic states, such as often repeated

non-specific infections of the respiratory tract, tonsillitis, otitis media and sinus infections, may be precursors of a characteristic attack⁴. The disease also spreads through families, especially where the members are in intimate contact with the patient. The younger members of the household are most often attacked, particularly if they are in the age group of five to twelve.

Epstein⁵ suggested the use of fruits containing salicylic acid as a preventive measure against rheumatism in children, claiming that the disease is secondary to metabolic derangement or vitamin deficiency. The amount of this drug in fruits is so small that it hardly seems that this treatment would be of any great benefit. Kaiser⁶ studied the effects of tonsillectomy and found that first attacks of rheumatism occurred fifty per cent less often in tonsillectomized children. Recurrent attacks were not benefited by this procedure.

It would appear that rheumatic fever in the South gives symptoms varying from the classical description to a loosely related group of manifestations, the most characteristic of which are mild joint pains. At times the manifestations are so slight as to be unnoticed. The disease is more prevalent than has been thought and must be combated by proper hygienic environment, adequate clothing and food, early treatment of diseased tonsils, sinuses and colds, and isolation of the rheumatic patient.

M. E. S.

4. Swift, H. F.: Factors Favoring Onset and Continuation of Rheumatic Fever, *Am. Heart J.* 6:625-636, June '31.

5. Epstein, J.: Salicylic Acid Fruit in Prevention and Treatment of Rheumatism in Children, *Arch. Pediat.* 48: 73-81, Feb. '31.

6. Kaiser, A. D.: Results of Tonsillectomy; Comparative Study of 2200 Tonsillectomized Children with Equal Number of Controls 3 and 10 Years After Operation, *Tr. Sect. Dis. Child., A. M. A.*, pp. 41-57, '30.

3. McLean, C. C.: Early Manifestations of Rheumatic Infections in Young Children, *Ann. Int. Med.* 5: 1357-1366, May '32.

The Beaumont Centenary—One hundred years ago an American medical classic was published in Plattsburgh—*Experiments and Observations on the Gastric Juice and the Physiology of Digestion*, by William Beaumont, M. D. Today the whole American medical profession . . . celebrates this centennial.—*Virginia M. Monthly*, January '34.

PHENOLPHTHALEIN INTOXICATION

For many years phenolphthalein has been generally regarded as a harmless drug and has been extensively used as a laxative and as a pink coloring for icing on cakes, candies, and dentifrices. In 1918 Abramowitz¹ and Fox² showed that in susceptible persons the ingestion of phenolphthalein causes a peculiar eruption of the skin. Since then there have been numerous reports of cutaneous lesions, of some visceral disturbances, and of at least one death in persons who had taken phenolphthalein.

Newman³, in a recent contribution, reviewed the literature on this subject and related his unfavorable experiences with the drug. He says that "at present the dermatosis is familiar, nineteen patients with phenolphthalein eruptions having been observed in our own clinic during the past year. The characteristic eruption is easy for the dermatologist to recognize on inspection . . . The typical eruption consists of somewhat grouped, irregular, polychromatic macular plaques, varying in size from that of a pinhead to that of a palm, and varying in color from pink to blue-red, violaceous or deep purple . . . The appearance of the eruption usually takes place several hours after the drug has been ingested and is accompanied by intense itching and burning. . . Relapses occur following renewed ingestion of the drug. . . Mild constitutional symptoms, as headache, malaise, and slight elevation of temperature may accompany the eruption." He further points out that there may be atypical cutaneous manifestations, such as ulcers and plaques on the tongue, bullous lesions, edema of the eyelids and conjunctivitis, stomatitis, and urticaria. The manifestations other than cutaneous which he lists are lipoid nephrosis, toxic nephritis with hematuria, visceral hemorrhages, and ulcerative colitis. The author also cites the case of Silberstein, a German physician, "who took a single dose of a phenolphthalein purga-

tive, and plaques suggesting cancer appeared on his tongue. A year later another dose caused a painful stomatitis and herpes on the genitals. About the same period a woman consulted him for lassitude, anorexia and a conjunctival ecchymosis, the result of taking seven tablets of a phenolphthalein preparation in three days. These experiences at that time prompted him to write: 'Phenolphthalein is not an indifferent drug, hence, before this substance is used under one of its hundred decorative titles, the patient must be warned of its possible serious effects.' "

One of Newman's patients had been taking "Agarol" and a rash on the face, neck, arms and legs appeared and also there was "typical erythema exudativum multiforme with many herpes iris lesions". A child of three years became desperately ill following an overdose of "Ex-lax" tablets. Newman mentions the case reported by Cleaves⁴ in which a healthy ten year old boy ate the contents of a box of "Ex-lax" tablets and died in nine days. "Autopsy revealed hemorrhages of various size throughout the length of the intestine, minute hemorrhages of the kidneys, liver, heart and brain, and marked congestion of the meninges. The picture was one of generalized destruction of the vascular endothelium."

There are two types of phenolphthalein, the yellow or impure form and the white or pure form. It has been claimed that only the impure form is toxic, but Novy⁵ has disproved this by causing eruptions with both yellow and chemically pure phenolphthalein. Little seems to be known about the toxicity of this drug and it is not understood why it is innocuous to many individuals and dangerous to others. But the fact remains that at times its effects are very toxic. Newman concludes by saying "phenolphthalein is contained in more than 125 proprietary preparations, put up in the form of laxative drugs, chewing gums, confections, fruits and biscuits. It is also used for pink coloring of candies, and in pink mouth washes and dentifrices. There ex-

1. Abramowitz, E. W.: Erythema Multiforme Associated with Cutaneous Pigmentation (Melanin); Clinical and Pathological Report of Five Cases, *J. Cutan. Dis.* 36: 11 (Jan.) 1918.

2. Fox, Howard: *J. Cutan. Dis.* 36: 253 (April) 1918.

3. Newman, Ben A.: Phenolphthalein Intoxication, *J. A. M. A.* 101: 10, Sept. 2, '33.

4. Cleaves, Montague: Poisoning by "Ex-lax" Tablets, *J. A. M. A.* 99: 654, Aug. 20, '32.

5. Novy, F. G., Jr.: Phenolphthalein Eruption; Experimental Data on Its Causation, *Arch. Dermat. & Syph.* 26: 125 (July) 1932.

ists, therefore, a multitude of possibilities for the ingestion of the drug. Hence, when exudative lesions of obscure origin are present, phenolphthalein as an etiologic agent should be considered in differential diagnosis."

It would seem that such a drug should be administered only under the direction of a physician; or, at least, that makers of the preparations above referred to should clearly label their products as containing phenolphthalein.

W. W.

Committee on Legislation and Medical Economics

Under this heading will appear from time to time contributions from the committee, issued through its Bureau of Public Relations.

Edward H. Cary, M. D., former president of the American Medical Association, and now Chairman of its Committee on Legislative Activities, has addressed a letter to the organized profession in Alabama. It is as follows:

"Legislation concerning the medical profession is presented at every session of Congress. Through our Bureau on Legal Medicine and Legislation one may ascertain the relative merits of the new bills which affect the health of the people as well as the interests of the medical profession.

"You no doubt remember that your officers and legislative committees have been instructed by the House of Delegates to oppose the building of hospitals to be used by veterans who had not established service-connected disability. The *economy program* expressed by the President clearly stated his position regarding hospitalization. We believe that the majority of the legionnaires take the same view.

"The American Legion recently adopted a four-point program, the success of which hinges upon the spread of hospitalization. The factor of need has been supplanted by the term "reasonable" in relation to the ability of the veteran to pay for home medical care and hospitalization. In our discussions with General Hines, we felt that his definition of the factor of need permitted an abuse of governmental care. The Legion's present program requires a more liberal interpretation than heretofore adopted by the Veteran's Bureau. I wish to call to your attention the fact that a struggle on the part of some three hundred thousand veterans to regain the loss of cash benefits will more than ever endanger the medical profession and its workshop, the hospitals, for it is conceivable that Congress will endeavor to save in one instance and spend more freely in another.

"It is most important that your committee bring to bear all possible pressure upon your Congress-

men and Senators before the next session of Congress shall meet. It is highly desirable that the weight of medical opinion and the influence of its allies, the real taxpayers of the country, be felt in order that this question of hospitalization will not be re-opened and broadened. Such a catastrophe would lead to expenditures far beyond the present demands and a change in medical practices which would result in evils too numerous for me to enumerate to one so well informed upon the subject as yourself."

Decisions of policy were never so difficult as they are today. In a mad world, turned up-side down, where, to feed the hungry, food is destroyed and its production curtailed by government orders; where, in a nation half clothed it is necessary to keep down the production of wool, and to plow up cotton; where it is necessary to board up thousands of houses in every city because two to five families are crowded together in many other homes, we cannot make snap judgments. We cannot arrive too carefully at decisions.

Receiving special favors from the United States Government at the present time are:

1. Railroads, in the form of loans that many believe amount to subsidy, intervention by the co-ordinator, Mr. Eastman, in trade agreements enabling them to buy rails at prices below the market, etc.

2. Steamship companies, direct subsidies in the form of mail contracts, outright subsidies, etc.

3. Banks, enjoying government guarantee of deposits, currencies issued to said banks upon bank-owned government securities, the institution being allowed to collect interest upon said securities, while at the same time loaning funds in currency issued upon the same securities at regular rates of interest; etc.

4. Insurance companies which maintain a powerful and successful lobby to see that individual acts of the government and congress do not vitiate their fiscal policies; treasury decisions are governed by possible repercussions as touching insurance company holdings, etc., etc. On account of the interlocking interests of finance and banking (all insurance companies are in the banking business on a gigantic scale) they are benefited directly by all the paternalistic acts listed above.

5. The farmers, by guarantees of crop prices, etc., loans on crops above market

prices, pegging of grain prices, etc., etc. Manipulations of the tariff in trade agreements for their benefit.

6. All who enjoy unearned increment, stock and bondholders; the government is constantly at expense to protect and uphold the interest of this class, and it directly extends actual partiality to them at all times, in obvious and practical manner. Tax free securities, etc.

7. The unemployed, of whatever persuasion or class; obviously, however, in effect this is a direct benefit extended to what is, in effect, a certain class.

8. The politician; party men under the party system by the thousands are beneficiaries of government favor in obvious ways.

9. The churches and religious property-holders hold such properties tax free.

10. Enterprises and communities, etc., are allowed to issue tax free securities.

11. Industries, classes engaged in certain pursuits, agricultural, etc., are protected by privilege tariffs.

12. Government servants, navy, army, postal employees, enjoy an old age retirement and pension system.

13. The natural resources of the public domain, such as minerals, oil, coal, water power, are in the hands of specially privileged groups who exploit them for private gain under the protection of governmental law, without regard to conservation or regard for the future needs of the country or the race. This is a pointed example of one of the worst abuses of extension of the privilege of subsidy and bonus to special groups of the population, in disguised form.

14. The ex-soldiers receive pensions, bonuses, service allowances, sick benefits, etc.

15. Individual states and communities are the beneficiaries of loans and grants for construction projects, etc.

The whole system probably is wrong; under it the government is plundered, group is set against group, in a blind selfish struggle to get the best for itself; interests overlap and interlock constituting one of the reasons for the breakdown we have had politically and economically in recent times.

It devolves upon the profession to study this whole subject most carefully, from all possible angles, and then to act as best benefits a good citizen according to his conscience and informed belief in what way he considers best for the common good.

DEPARTMENT OF PUBLIC HEALTH

DEPARTMENT OF PUBLIC HEALTH

J. N. Baker, M. D.
State Health Officer in Charge

THE PSYCHOLOGY OF HEALTH EDUCATION

At the recent meeting of the American Public Health Association, held in Indianapolis, the Institute on Health Education held five sessions of three hours each at which the psychology of health education was liberally discussed. Dr. Galdston, Director of the Institute, took the position that the purpose of all health education is to influence behavior. He maintained that man's behavior is essentially emotional rather than logical (based on feelings rather than on knowledge) and that if health is to be taught effectively this emotional ele-

ment must be recognised. In his opinion, the use of this principle in the field of health education has been negligible compared with its application by commercial advertisers.

There are four cardinal principles to the technic of health education:

1. Arouse curiosity. This is achieved by the extraordinary, the novel, the new. In arousing curiosity one must not confuse the extraordinary with the sensational or the novel with the bizarre. Arousing curiosity is not an end in itself; carried to extreme it tends to defeat its purpose.

2. Enlist sympathy. Having aroused curiosity, the aim is to retain attention, i. e., enlist sympathy. To do this the question of the person to be influenced, "Does

this concern me?", should be anticipated and answered convincingly in the affirmative.

3. Impart information. The technics of doing this are multiform and dependent on the nature of the information to be given. Such information must be authentic and within the understanding of the group to be influenced.

4. Motivate or lead to action. The key to this problem is the appeal to the emotions. To achieve action the end must be made desirable. This means that the end must be emotionalised, preferably with a pleasurable emotion though sometimes, of necessity, with a painful one.

The secret of motivation is to find out the interests of the individual and capitalise them. Much can be learned by a study of individuals of different age or social levels such as that recorded by H. L. Hollingworth in "Mental Growth and Decline" (Appleton-Century Company, 35 West 32nd Street, New York City, 1927, \$3.00).

BUREAU OF PREVENTABLE DISEASES

D. G. Gill, M. D., Director

A WELL ORGANIZED TUBERCULOSIS SANATORIUM

THE GEORGIA INSTITUTION

The advances made in recent years in the surgical handling of pulmonary tuberculosis have increased the demand for sanatorium supervision of cases, but at the same time the necessary period of institutional residence has been greatly shortened. Surgery therefore has become the yard stick for measuring the benefits derived from such care. In this short article an attempt will be made to describe the excellent work now being done in the Georgia State Sanatorium, located at Alto, Ga.

At the outset, it is needless to say that the Georgia Sanatorium fully appreciates the value of collapse therapy. This fact is attested by figures showing that from 60 to 70% of the adult sanatorium population receive some form of surgical collapse. By comparison with other state institutions, Georgia ranks near the top. Several factors have combined to make this percentage figure possible.

First: The medical staff members, having had extensive opportunity for comparing the relative merits of surgical versus conservative methods under similar conditions, have become thoroughly convinced that surgery, where possible, offers the greatest opportunity for arresting a pulmonary lesion.

Second: The administration, appreciating the fact that an indefinite period of stay soon fills all the sanatorium beds with patients unsuitable for any surgical procedure, has instituted a six months' limit of stay. Such a period provides adequate training for the patients in which only bed rest is possible and at the same time allows time for the institution of proper surgery. Of course some leeway is allowed, but only when recommended by the physician in charge. This arrangement has the feature of caring for a larger number of patients while their condition is still amenable to surgery.

Third: By taking serial x-rays on ALL cases, many patients unsuitable for collapse measures on admission to the sanatorium are subsequently given the benefit of surgery. These serial x-rays are invaluable for medical teaching.

Fourth: The general practitioners over the State are encouraged to visit the Sanatorium so that the proper handling of cases may be observed and continued, once the case is discharged from the institution.

Fifth: The Sanatorium work is closely co-ordinated with the traveling chest clinic operated by the State so that early diagnosis and proper follow-up work can be provided in districts inadequately equipped to do such work.

The hope of such a program is to eventually provide an even shorter sanatorium residence by having practically a hundred per cent surgical selection of cases. Such a plan would admit all cases for consideration and immediately return all non-surgical cases to their respective counties for isolation and precautionary instructions. This grand program would serve as a monument to economical and scientific handling of pulmonary tuberculosis from a public health standpoint.

To return to a description of the Georgia Sanatorium, the beautiful mountain lo-

cation is ideal for promoting mental rest. This statement is made with the full appreciation that what one is doing is much more important than where one is located. The institution has a bed capacity of more than 280; however, the number of patients accommodated depends upon funds available for operation. The staff as a whole and as individuals is happily chosen. The morale of the patients is excellent because they anticipate a shortening of bed rest with surgery and an early return to their normal mode of living.

The Children's Building was donated several years ago by the Masons of Georgia. It has a bed capacity of over 70 and is operated primarily as a preventorium. Thus, the infected child contacts can be built up generally to forestall manifest tuberculosis later in life. Many children with non-tuberculous lesions, such as bronchiectasis, are given the benefit of treatment in this department, some surgically.

Although the Sanatorium is established primarily for the treatment of tuberculosis, many non-tuberculous diagnoses are made. For example, by proper laboratory studies and lipiodol radiography, 15 cases of bronchiectasis were discovered on the men's ward alone over a two months' period. Such cases without sanatorium facilities would have remained mis-diagnosed indefinitely.

In an effort to evaluate the ultimate results of surgical collapse measures, cases so treated are requested to return whenever possible for periodic studies. Such an arrangement has increased the institution's great wealth of teaching data. The patient's family physician, of course, has charge of the case after dismissal.

The teaching facilities of the Georgia State Tuberculosis Sanatorium should come in for high praise. Doctors from all over the State are especially invited as individuals or groups to avail themselves of an opportunity to standardize their concepts of modern phthisiotherapy. They are provided quarters and board for the period of their stay. Instruction is given in x-ray selection of collapse cases, in the technique of pneumothorax administration, and groups of phrenic nerve operations are arranged for their observation. At the weekly staff conference each case admitted to the

Sanatorium comes up for consideration and the reasons and indications for certain therapy are given.

As for the all important administration of Georgia's Sanatorium non-medical projects, there is the highest praise. A beautiful irrigated garden, a large dairy herd, with a complete pasteurization plant, a large beef cattle herd, hundreds of hogs, with sufficient feed stuffs produced for these, all aim for economical operation.

Regardless of one's ideas as to the relative merits of state, county or district sanatoria, Georgia's State Sanatorium is pointing the way to a better understanding of the part to be played by any tuberculosis sanatorium in the ultimate control of pulmonary tuberculosis.

R. A. B.

BUREAU OF LABORATORIES

J. G. McAlpine, Ph. D., Director

AGGLUTININS*

THEIR SIGNIFICANCE IN CERTAIN DISEASES

4. Endemic Typhus and Rocky Mountain Spotted Fever

There is a group of fevers occurring in various sections of the world which have been classed together as typhus-like. Clinically they have much in common being characterized by sudden onset, chills, fever and an exanthem. Etiologically and immunologically they are similar being caused by members of the little known group of micro-organisms called *Rickettsiae* several species of which produce agglutinins for *B. proteus* X19. From the epidemiologic standpoint, it has been found that insects must act as vectors in all.

Two of these diseases, Rocky Mountain spotted fever and endemic typhus, or Brill's disease, appear within the borders of the United States. Recent observations have shown that the first of these is not confined to a limited area in the West as was formerly believed but occurs in the rural districts of many of our Eastern and Southern States. The incidence of endemic typhus has markedly increased, especially in Alabama, Georgia and Texas, during the past two years. The peanut growing

*Fourth in a series on the subject. The first, second and third installments appeared in October, November and December, respectively.

sections with their large supplies of rodent food have furnished the greatest number of cases because the rat has been able to proliferate therein with amazing rapidity.

Many attempts have been made to discover the etiologic factor of typhus and grow it under artificial conditions. From Ricketts's and Wilder¹ (1910) to Mooser² (1929), numerous individuals have cultivated certain pathogenic micro-organisms from infected persons which they have considered to be the cause of typhus fever. Included among these organisms have been cocci, encapsulated rods, spirilla, protozoa, ascomycetes and spirochetes. None of these in the final analyses has been able to satisfy the modified Koch's postulates which have been set up for this disease: i. e., none has been able to (1) produce experimental typhus in the guinea pig; (2) set up immunity in guinea pigs against a virulent typhus virus; (3) cause the formation in the rabbit of agglutinins for *B. Proteus* X19; and (4) form Rickettsiae when injected into the louse. Topley and Wilson³ have pointed out that "a number of organisms are liable to be found in the blood of typhus patients; it would appear that the resistance of these patients to bacterial invasion is very low and that it is not uncommon, even before death, for more than one species of organism to be present in the circulating blood."

The most suggestive results have been obtained with a special variety of the proteus bacillus called *Proteus* X. Weil and Felix⁴ obtained this organism from the urine of a patient suffering from typhus fever. Since then a number of other investigators have succeeded in cultivating similar bacteria from other cases of the disease. The noteworthy characteristic of these micro-organisms is their high agglutinability with the blood of individuals infected with typhus.

There appears to be a marked variation in this respect among the different strains and the one labelled *Proteus* X19, being the most agglutinable, is widely used for the Weil-Felix reaction. Nevertheless, there is little evidence that the proteus bacillus is the etiologic factor in typhus because it does not satisfy the postulates given above and is found only in a minority of typhus patients.

At present it is the consensus of opinion that the causative factor of typhus should be classed as a Rickettsia. DaRocha Lima⁵ describes the Rickettsiae as minute micro-organisms which appear as exceedingly small bacilli under the microscope, which have their principal habitat in arthropods either as parasites or symbionts and which are not cultivatable on ordinary media. Ricketts⁶ first found these microscopic bodies in the blood sera of men, guinea pigs and monkeys suffering from Rocky Mountain spotted fever and also in infected ticks. Later Ricketts and Wilder¹ noticed them in the blood of typhus patients in Mexico. Further studies proved that this so-called Rickettsia was constantly present in infected lice. It has been given the name *Rickettsia prowazeki*. So far it has not been cultivated on media free from living cells. Wolbach and Schlesinger⁷ have grown it in tissue cultures.

The Weil-Felix reaction, or the agglutination of *Proteus* X19 by the serum of the suspected case, has proved of inestimable value in the practical diagnosis of epidemic typhus. Numerous experiments have shown the high specificity of this test. In endemic typhus, Brill and Baehr⁸ report disappointing results from its use, but Dyer⁹ states "the blood serum contains agglu-

1. Ricketts and Wilder: The Etiology of Typhus Fever (Tabardillo) of Mexico, J. A. M. A. 54, 1373, 1910.

2. Mooser, H.: Ueber das Gewebsvirus beim Mexikanischen Fleckfieber, Schweiz. med. Wchnschr. 59: 599-601, June 8, '29.

3. Topley and Wilson: The Principles of Bacteriology and Immunity, William Wood & Co., Vol. 2, 1205, 1932.

4. Weil and Felix: Ueber die Beziehungen der Gruber-Widalschen Reaction zum Fleckfieber, Wiener kl. Wchschrift, Bd. 31 S. 974, 1916.

5. da Rocha Lima: Rickettsien, in Kolle & Wassermann Handbuch der Pathogenen Mikroorganismen, B. VIII 1347, Dritte Auflage, 1929.

6. Ricketts: A Microorganism Which Apparently Has a Specific Relationship to Rocky Mountain Spotted Fever, J. A. M. A. 52, 379, 1909.

7. Wolbach, S. B., and Schlesinger, M. J.: Cultivation of Micro-Organisms of Rocky Mountain Spotted Fever (*Dermacentor* Rickettsi) and of Typhus (*Rickettsia Prowazeki*) in Tissue Plasma Cultures, J. M. Research 44: 231-256, Dec. '23.

8. Brill and Baehr: Typhus Fever, Nelsons Loose Leaf Living Medicine, Vol. 1, 191, Thomas Nelson & Sons, New York, 1929.

9. Dyer, R. E.: Typhus and Rocky Mountain Spotted Fever in United States (Kober, Lecture) Mil. Surgeon 72: 421-439, June '33.

tinins for *Proteus* X19 in dilutions of 1:160 or more in nearly all cases. The highest titer is usually reached at the end of the second week and may reach a dilution of 1:40,000." Cases occurring in Alabama almost invariably show a strongly positive Weil-Felix reaction, most of them exhibiting a complete agglutination in the 1:640 dilution which is the highest one used routinely. Sera which agglutinate only in the 1:80 are considered doubtful and second specimens are requested. Those which give reactions in the 1:160 or above are called positive. It has been stated that in epidemic typhus the agglutinins rapidly decline during convalescence and disappear almost entirely after five months. In a few cases of endemic typhus which have been observed for long periods at this laboratory, the titers gradually declined but agglutinins were present in appreciable quantities even after six months.

In Rocky Mountain spotted fever a *Rickettsia* has been found which appears to be constantly present in infected man, animals and ticks. The Weil-Felix reaction is given by the sera of individuals suffering from this disease but not perhaps with as high a degree of regularity as in typhus. A titer of 1:160 is significant. Davis and Parker¹⁰ have stated that "although the agglutination of the *Proteus* X organism occurs in a considerable portion of cases of Rocky Mountain spotted fever, the number of strains necessary to secure agglutination in sufficiently high titers to be of possible diagnostic significance and the irregularity with which the results are obtained indicate that with the available strains the agglutination test can not be considered a diagnostic procedure in a measure comparable to agglutination tests in certain diseases, e. g., tularemia". Also, he adds that it is necessary to receive at least two serum samples, one between the tenth and fifteenth day and another a week or ten days later. Further, there is evidence that the agglutinins disappear more quickly than in typhus fever.

From the laboratory standpoint the differential diagnosis between spotted fe-

ver and endemic typhus is most difficult. Both diseases give the Weil-Felix reaction, although there is some variation with different strains of *Proteus* X. Attempts have been made to use this as a means of separation, but as yet sufficient data have not been accumulated. The total leucocyte count is of some value, because in endemic typhus it usually falls within normal limits or there may be leucopenia, while in Rocky Mountain spotted fever a leucocytosis is generally present.*

Dyer⁹ has stated that "for the laboratory identification of a virus suspected of being either typhus or spotted fever the study of the effect of the virus on laboratory animals is essential. The points to be observed are (1) the clinical picture produced in guinea pigs; (2) the production of agglutinins to *Proteus* X in rabbits or monkeys; (3) the presence of the typical histologic picture in the brains of animals; and (4) cross-immunity tests." Since this involves a large number of animals, and a great expenditure of labor and time, it is impracticable as a routine measure. This procedure has been described in detail by Badger¹¹.

BUREAU OF SANITATION

G. H. Hazlehurst, Director

THE NRA AND ALABAMA'S HEALTH

That part of the NRA which sets aside public funds for the purpose of constructing public works may prove to be a big influence for the protection of the public health.

Among the preferred projects in this campaign to improve economic conditions in the United States are those of constructing waterworks and sewage collection and treatment plants. Because the management of this fund propose to make these moneys available at low interest rates, and to communities which heretofore have had difficulties in financing, we may see waterworks and sewer systems constructed in

*Several cases of endemic typhus occurring in Montgomery recently have exhibited increased white cell counts. One of the newer text-books states that a leucocytosis is generally present in endemic typhus.

11. Badger, L. F.: Laboratory Diagnosis of Endemic Typhus and Rocky Mountain Spotted Fever, *Am. J. Pub. Health* 23: 19-27, Jan. '33.

10. Davis, G. E., and Parker, R. R.: Observations on Agglutination of *Proteus* X Organisms in Rocky Mountain Spotted Fever, *Pub. Health Rep.* 47: 1511-1521, July 15, '32.

communities which may otherwise have been compelled to forego these conveniences and protection for long periods.

Typhoid incidence is now greatest in small towns and in the more thickly settled fringes around larger cities where the city's advantages have not yet reached. Supplying of good water and proper collection and disposal of sewage will undoubtedly reduce the prevalence of "insanitary" diseases in such communities as they have reduced them in the larger centers.

The steady decline of water-borne gastro-enteric diseases has been due to many features of the sanitary campaign, and in the case of typhoid the decline is partially due to inoculation. To reduce the incidence further will require more work per unit of decrease. This is because in the less densely populated sections the number of infections is less, but the amount of work and money expended for waterworks and sewers per unit of area is almost the same as for the more densely settled areas. Even then less people per area unit are served.

Collective water supply and sewage collection in small communities is more difficult to attain. This is due to disproportionate costs per individual, greater difficulty in financing, and lack of incentive and desire for these conveniences and protections.

The medical profession and sanitariums of all types should devote proportionate parts of their time to education and creation of a desire for these things. There is an especially fortunate time at present, for at least the financial barriers have been partially lowered or removed and all communities should be encouraged to take advantage of the occasion. H. G. M.

WATER

SOME THINGS EVERYONE SHOULD KNOW

Water is so essential to man's existence, health, and comfort that it is not strange that many attributes, both good and bad, have been ascribed to it. Many of these had their origin in ancient times and although proven false in later days still persist in the minds of many who do not have time or have a desire to investigate.

Because history began in those arid countries of the Near East, water naturally played an important part. Common beliefs prevailed that spirits, both good and evil

inhabited certain waters. From this we get the worship of rivers, wells, and springs. To this day the peoples of India bathe in the foul sewage-laden water of the Ganges River in order to placate the gods or to purify themselves spiritually.

Among the more enlightened people of our present day some fanciful beliefs, such as the following, still exist: that the water witch with his forked stick can determine the location of underground water; that water from a spring, just because it issues from Mother Earth, is pure and healthful; that such a disease as malaria is caused by drinking "foul water"; that certain minerals in water have beneficial or harmful effects upon the human body; that water purifies itself on flowing seven miles or some such set distance; that clear sparkling water is pure,¹ etc.

Increased knowledge in chemistry, bacteriology, and biology have tended largely to dispel these beliefs and fancies. Chemistry and water analysis have shown us that the minerals in water are present in such minute quantities that they could scarcely affect the person drinking such waters one way or the other. For instance, one gallon of milk has the equivalent mineral content of a bath tub full of the average drinking water from an Alabama public supply. Four cups of celery have the calcium equivalent of 20 glasses of water, while 2½ cups of spinach will supply the same amount of this mineral as 20 glasses of water. An ordinary plate lunch of meat, potatoes, vegetable, and dessert supplies our bodies with as much minerals as we could obtain from 250 glasses of water. Pure drinking water is a vital necessity in our life but it can hardly be seriously considered as a source of minerals for our body.

Sparkling clear water may issue from a spring; yet, if we took a sample of this water and made a bacterial examination of it, the probabilities are that we would find it laden with bacteria. While it is true that these bacteria may not all be moribund, yet the presence of a certain type indicates that the avenue of entrance for disease germs is open. Clarity of water is not a criterion of safety.

There is such a thing as self purification of water but it is the height of fallacy to

1. Illinois Health Messenger, September 1, 1933.

state, as a general thing, that water purifies after flowing seven miles or seven days or any such definite elapsed distance or time. Many factors enter into self purification of water among which may be mentioned sedimentation, oxidation, filtration, and biologic processes. Many of these natural phenomena have been studied and learned and their action made use of by man in controlled purification.

Unknown waters may be dangerous as shown above but water has been unjustly accused in some instances. As an example, we know that many people believe that the drinking of foul water is a cause of malaria. Science has shown us that this is not true. Malaria is caused by the bite of a certain species of mosquito previously infected by having bitten a sufferer or carrier of the disease.

The most common of water-borne diseases in this State are typhoid fever and dysentery. Cholera is a water-borne disease but is not common because there are few, if any, cholera cases within the State. We can conceive of water being a means of causing other intestinal disorders such as hookworm, tapeworm, etc., but such diseases cannot be classed as water-borne.

Water can be made safe by mechanical, chemical, or biologic processes. Boiling water or chemical sterilization will make water safe if properly done; however, such means should not be substituted for a properly located, constructed and protected supply. In municipal supplies chlorine gas is largely used as an adjunct in purification.

Many objections, sincere or sentimental, are voiced against chlorine gas as a disinfectant. Most of these originate in the recollection of the use of this gas in the World War. It is true that the gas was used in the chemical warfare to destroy life but on the other hand it was also used to save life. Only 1/2 of 1% of all injuries to United States forces in the World War were caused by chlorine gas. Now let us compare lives saved. Prior to the World War typhoid was the scourge of mobilized armies. During the War Between the States twice as many men died from typhoid as died from all causes in our army in the late war. Had the same typhoid rate prevailed in the World War as

in the Spanish-American War 60,000 more lives would have been lost in our field forces. Typhoid inoculation played a great part in preventing typhoid in the World War but authorities state that if chlorine, or its compounds, had been available for all emergency use it is doubtful if 100 cases would have occurred among the 2,000,000 men in France.

Chlorine is added in such minute quantities that it exerts no appreciable influence other than sterilization. There is no danger of drinking an overdose in water as it would be entirely unpalatable.

Many disagreeable tastes and odors are ascribed to chlorine when, as a matter of fact, it cannot rightly be blamed. Microscopic organisms, organic matter and chemical contamination usually are the prime causative factors.

False ideas about drinking water may lead to water-borne illnesses. Free advice upon water supplies will be gladly given upon request sent to the Bureau of Sanitation, State Department of Public Health, Montgomery, Alabama.

H. G. M.

CURRENT STATISTICS

*PREVALENCE OF COMMUNICABLE
DISEASES IN ALABAMA

	Oct.	Nov.	Estimated Expectancy Nov.
Typhoid	51	46	84
Typhus	75	92	8
Malaria	1279	395	189
Smallpox	0	1	17
Measles	28	41	52
Scarlet fever	192	213	189
Whooping cough	52	41	75
Diphtheria	310	258	356
Influenza	129	124	266
Mumps	6	9	22
Poliomyelitis	1	3	3
Encephalitis	5	3	2
Chickenpox	14	33	71
Tetanus	7	8	6
Tuberculosis	250	213	270
Pellagra	81	21	23
Meningitis	2	2	4
Pneumonia	72	169	215
Shyphills (private cases).....	204	137	143
Chancroid (private cases).....	3	3	8
Gonorrhea (private cases).....	172	157	157
Ophthalmia neonatorum	1	1	2
Trachoma	0	0	0
Tularemia	0	1	0
Undulant fever	1	0	0
Dengue	0	0	2
Amebic dysentery	0	1	0
Leprosy	0	1	0
Rabies—human cases	1	0	0
Positive animal heads.....	50	74	—

*As reported by physicians and including deaths not reported as cases.
The Estimated Expectancy represents the median incidence of the past nine years.

PROVISIONAL MORTALITY STATISTICS

Alabama October 1933

CAUSES	Number of Deaths Registered October 1933			Annual Rate per 100,000 Population		
	White	Colored	Total	Oct. 1933	Oct. 1932	Oct. 1931
ALL CAUSES	1221	1075	2296	986.4	944.8	944.7
Typhoid fever	5	8	13	5.6	3.5	10.9
Smallpox						
Measles	2		2	0.9		0.4
Scarlet fever	1		1	0.4	1.7	1.3
Whooping cough	6	3	9	3.9	3.0	2.6
Diphtheria	27	7	34	14.6	13.9	16.2
Influenza	21	11	32	13.7	17.0	4.4
Pneumonia, all forms	67	55	121	52.0	42.7	42.9
Poliomyelitis					0.9	2.2
Tetanus	2	2	4	1.7	2.6	0.4
Tuberculosis, all forms	68	96	164	70.5	64.9	81.4
Tuberculosis, pulmonary	65	88	153	65.7	63.1	72.2
Malaria	40	30	70	30.1	10.9	14.9
Cancer, all forms	91	36	127	54.6	60.5	51.6
Diabetes mellitus	17	3	20	8.6	11.3	10.9
Pellagra	13	16	29	12.5	15.2	12.3
Cerebral hemorrhage, apoplexy	68	40	108	46.4	62.3	60.4
Diseases of heart	143	111	254	109.1	135.4	96.7
Diarrhea and enteritis						
Under 2 years	33	14	47	20.2	16.5	19.7
2 years and over	15	5	20	8.6	7.4	6.1
Nephritis	92	83	175	75.2	78.4	80.5
Puerperal state, total	12	21	33	14.2	10.9	16.2
Puerperal septicemia	6	7	13	5.6	2.2	5.2
Congenital malformations	15	4	19	8.2	3.5	7.0
Congenital debility and other diseases of early infancy	73	52	125	53.7	48.8	47.3
Senility	14	27	41	17.6	15.7	15.8
Suicides	11		11	4.7	6.1	5.2
Homicides	15	50	65	27.9	21.8	29.3
Accidental burns	4	4	8	3.4	5.2	4.4
Accidental drownings	3	2	5	2.1	3.0	3.5
Accidental traumatism by firearms	3	3	6	2.6	4.8	3.5
Mine accidents						1.3
Railroad accidents	2	5	7	3.0	4.3	2.1
Automobile accidents	37	19	56	24.1	19.2	17.1
Other external causes	27	*19	*46	19.8	19.2	18.4
Other specified causes	219	172	391	168.0	143.2	151.9
Ill-defined and unknown causes	75	177	252	108.3	91.0	105.5

*Includes 1 legal execution.

Medical News

(Secretaries of county medical societies and other physicians will confer a favor by sending for this section of the Journal items of news relating to society activities.)

The physicians of Alabama are cordially invited to attend a series of clinics arranged by the Hillman Hospital of Birmingham for the week beginning January 22nd. The Bulletin of the Hospital, which was recently mailed to all physicians in the State, gives in detail the schedule of these clinics and operations.

The Hillman Hospital has almost 500 beds and treats in its Out-Patient Department about 400 patients daily. Its wards contain a wealth of material of the greatest variety and much that is unusual. Realizing the interest that this large amount of clinical material must hold for the phy-

sicians of the State, as well as for those upon the immediate staff, the hospital authorities are planning to hold a week of clinics twice yearly, in mid-winter and in mid-summer. The clinics about to be held will constitute the first series and it is hoped that a large number of Alabama physicians will attend.

* * *

The Lawrence County Medical Society, in regular session December 5, elected the following officers for the ensuing year:

President—Dr. J. F. Huey, Hillsboro.

Vice-President—Dr. J. A. Ussery, Courtland.

Secretary-Treasurer—Dr. R. E. Harper, Moulton.

The Board of Censors for 1934 will be composed of Drs. J. P. Dyar, Chairman, Moulton; H. C. McCullough, Town Creek; W. R. Taylor, Town Creek; J. A. Ussery, Courtland; and R. P. Irwin, Moulton.

* * *

The following officers have been elected for 1934 by the Montgomery County Medical Society:

President—Dr. John Branch, Montgomery.

Vice-President—Dr. Harold Watkins, Montgomery.

Secretary—Dr. J. L. Bowman, Montgomery.

Treasurer—Dr. F. C. Stevenson, Montgomery.

Dr. W. B. Westcott, Montgomery, succeeds Dr. F. C. Stevenson on the Board of Censors.

* * *

The following are recent additions to the membership of the Jefferson County Medical Society:

Dr. James B. McLester, 930 So. 20th St., Birmingham.

Dr. W. W. Locke, Empire Building, Birmingham.

Dr. Neal N. Wood, Hillman Hospital, Birmingham.

The officers for 1934 as elected on December 4 are:

President—Dr. George S. Graham, Birmingham.

Vice-President—Dr. Kyle J. Kinkead, Birmingham.

Secretary—Dr. W. B. Hardy, Birmingham.

Dr. Alfred A. Walker, Birmingham, was reelected to the Board of Censors for a term of five years.

* * *

Dr. Thomas M. Blake of Double Springs has been elected President of the Winston County Medical Society. Officers chosen to serve with him are Dr. C. A. Olivet, Haleyville, Vice-President; and Dr. W. E. Howell, Haleyville, Secretary-Treasurer. Dr. W. R. Bonds, Double Springs, is now Chairman of the Board of Censors. Dr. J. Sam Snoddy, Haleyville, will serve on the Board for the next five years. The County Quarantine Officer is Dr. W. M. Godsey, Haleyville.

* * *

Dr. Ralph McBurney, professor of bacteriology in the School of Medicine of the University of Alabama, has been reelected President of the Tuscaloosa County Medical Society. Dr. J. S. Tarwater, Tuscaloosa, was named Vice-President; Dr. C. C. Belcher, Tuscaloosa, Secretary-Treasurer; and Dr. Alston Maxwell, Tuscaloosa, was reelected to serve on the Board of Censors for a period of five years.

* * *

At a recent meeting of the Russell County Medical Society, the following were selected as officers for 1934:

President—Dr. Clarence Long, Hurtsboro.

Vice-President—Dr. Seth J. Floyd, Phoenix City.

Secretary-Treasurer—Dr. John Prather, Seale.

Dr. Richard S. Watkins, Phoenix City, will be a member of the Board of Censors. Associated with him will be Dr. W. B. Hendrick, Hurtsboro; Dr. John Prather and Dr. R. B. McCann, Seale; and Dr. Clarence Long.

The President appointed a committee to confer with the Russell County Relief Committee in regard to treatment of indigent persons in their homes. This committee is composed of Dr. W. B. Hendrick, Dr. John Prather and Dr. Seth J. Floyd.

* * *

During the coming year the following will serve as officers of the Marengo County Medical Society:

President—Dr. C. J. Stallworth, Thomaston.

Vice-President—Dr. D. C. Cameron, Faunsdale.

Secretary-Treasurer—Dr. Gerald N. Williams, Linden.

The Chairman of the Board of Censors will be Dr. W. B. Harrell, Thomaston. Other members are Dr. D. C. Moseley, Faunsdale; Dr. C. N. Lacey, Demopolis; Dr. T. F. Long, Linden; and Dr. J. D. Jones, Sweetwater.

* * *

The Coffee County Medical Society has elected the following officers for the new year:

President—Dr. A. T. Colley, Enterprise.

Vice-President—Dr. C. P. Hayes, Elba.

Secretary-Treasurer—Dr. W. A. Lewis, Enterprise.

Dr. B. J. Massey, New Brockton, will serve on the Board of Censors.

* * *

Application blanks are now available for space in the Scientific Exhibit at the Cleveland Session of the American Medical Association, June 11th to 15th, 1934. The Committee on Scientific Exhibit requires that all applicants fill out the regular application form and requests that this be done as early as convenient. The final date for filing applications is February 26th, 1934. Persons desiring to receive application blanks should address a request to the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago, Illinois.

* * *

Dr. S. B. McPheeters, formerly of the staff of the State Department of Health, announces the opening of offices in Rooms 101-103, Medical Arts Building, Charlotte, N. C.

* * *

Recently elected officers of the Cullman County Medical Society are as follows:

President—Dr. J. G. Daves, Cullman.

Vice-President—Dr. R. B. Dodson, Cullman.

Secretary-Treasurer—Dr. M. S. Whiteside, Cullman.

Dr. J. C. Martin, Cullman, was elected a member of the Board of Censors.

Truth About Medicines

PROPAGANDA FOR REFORM

Atabrine—Plasmochin.—According to information received, Atabrine is a product of the I. G. Farbenindustrie in Elberfeld, Germany, and is proposed as a substitute or for use with "Plasmochin" in the treatment of malaria. It is sold in America by the Winthrop Chemical Company. The product is stated to be the hydrochloride of a dialkylamino derivative of acridine (alkylamino-Alkylamino Acridinderivat, Ger.). Atabrine has not been accepted for New and Nonofficial Remedies, nor has the Winthrop Chemical Company requested consideration by the Council on Pharmacy and Chemistry. According to the preliminary report of the Council on Pharmacy and Chemistry (J. A. M. A., July 9, 1927, p. 113), Plasmochin is a synthetic quinoline derivative, developed in Germany and proposed for use in the treatment of malaria. However, according to von Oettingen (Therapeutic Agents of the Quinoline Group, American Chemical Society Monograph 64, 1933) it "cannot be considered as a substitute for quinine, but it seems to be valuable when quinine cannot be used, and as an adjuvant in the administration of quinine." Plasmochin is marketed by the Winthrop Chemical Company; this firm, however, has not submitted the evidence required to make the product acceptable for New and Nonofficial Remedies. (Jour. A. M. A., October 21, 1933, p. 1336)

Lash-Lure.—There have been sixteen cases of severe untoward effects reported following the use of a single product called "Lash-Lure". This preparation is an aniline dye having for its base probably either paraphenylenediamine or paratoluylenediamine or some closely related substance. Every physician, and practically every responsible beauty parlor, knows the risk that is run in the application of dyes of the aniline type to the hair of the scalp. It has long been good beauty parlor practice to insist that persons who are to be subjected to an aniline hair dye should be tested for sensitivity to that product. Because of the irritating effects of such dyes, there is no justification for the use of so dangerous a substance around the delicate tissues of the eye. Cosmetics are under no national control. The Lash-Lure tragedies emphasize the need of

some sort of national control over the sale of cosmetics. (Jour. A. M. A., November 11, 1933, p. 1566)

Tolerances for Arsenic, Copper and Lead in Foods.—The Committee on Foods reports that arsenic, copper and lead compounds are highly toxic. Foods may be dangerously contaminated with these elements by insecticide sprays, chemicals used in the manufacture of foods, factory processing equipment, and other means. Proper precautions should be taken in the culture, treatment, preparation, processing, packing, manufacture or preservation of foods that they shall not be contaminated with arsenic, copper or lead compounds. Foods to be eligible for acceptance shall not contain arsenic, copper and lead in excess of the tolerance established by the United States Department of Agriculture. (Jour. A. M. A., November 4, 1933, p. 1483)

Contamination of Fruits and Vegetables with Toxic Insecticide Spray Material.—The Committee on Foods reports that distributors of fruits and vegetables that may bear toxic spray material are obligated to remove such poisonous contaminations before they enter commerce for retailing to the public, or to warn food manufacturers of the possible presence of the spray residue. Food manufacturers using fruits and vegetables should take proper precautions either to assure the absence of toxic spray contaminations or their removal before the products are prepared or packed for consumption. Distributors of fresh fruits and vegetables and manufacturers of foods containing these products bear a serious responsibility to the public that their products as presented for consumption are entirely wholesome; carelessness or disregard of this public health responsibility is criminal. (Jour. A. M. A., October 21, 1933, p. 1316.)

NEXT ANNUAL MEETING

BIRMINGHAM

APRIL 17-19, 1934

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NEUROSYPHILIS*

A STUDY OF 240 CASES

By

R. C. PARTLOW, M. D. and
FRANK A. KAY, M. D.

Bryce Hospital, Tuscaloosa, Alabama

Within the past decade numerous reports tabulating the results of the improved treatment of neurosyphilis, particularly paresis, have appeared. Before the advent of tryparsamide and malarial therapy results were most disappointing. In that period the receiving physician in a state hospital for the insane could, almost with a certainty, predict that the recently admitted parietic would be dead within a period of from one and one-half to two years.

The usual treatment at that time—salvarsan, neosalvarsan, and mercury—seemed to have little effect upon the clinical course of the disease. Some patients appeared to decline more rapidly when treated than when left untreated. Remissions did occur which could not be explained upon a basis of therapy. The wards for the chronic invalids had numerous beds occupied by helpless, demented, and untidy parietics in the end stage.

The picture is different now. An entirely satisfactory method of treatment has not yet been developed but progress has been and is now being made. Some reports are so glowingly enthusiastic that it is well to pause and inquire into what is really being accomplished. Different people see things from different angles.

For this reason we have undertaken a review of the neurosyphilitics who have been admitted into the Bryce Hospital for a ten-year period beginning with our own fiscal year on October 1, 1921 and ending September 30, 1931. This gives a comparison of the latter years of the older methods of treatment with the development and results of the new.

Wagner Von Jauregg¹ inoculated his first parietics with tertian malaria in 1917 but it was not until 1923 that he reported a series of any size. Lorenz, Loevenhart, Bleckwenn, and Hodges² reported their first results with tryparsamide in 1923.

We are better able now, ten years after the advent of these treatments, to evaluate them than we would have been to have hastily drawn our conclusions from a few cases immediately after the first favorable effects of treatment were evident.

During the ten-year period mentioned above we admitted 240 known white male neurosyphilitics into the Bryce Hospital. We shall present several tables which resulted from a study of these cases.

Table I gives the figures of the first admissions by years. The first column gives the number of cases of neurosyphilis admitted, the second the number of white male first admissions, and the third column the percentage of neurosyphilis for the year.

Table II gives the classification of these cases as to type.

Table III shows the results of the Wassermann test, upon admission, on both the blood and spinal fluids.

It is interesting to note that there were twenty-four negative bloods in the group, and without a spinal puncture or striking neurologic findings an incorrect diagnosis could have easily been made. The spinal fluid of the parietics was 100% positive while five of the cerebrospinal group had negative spinal Wassermans. They were all of the vascular type. Four had received treatment before admission and one had not.

The age table is of little interest except to show that one case occurred under twenty years of age, three from twenty to twenty-four, and five from sixty-five to seventy-four years, the oldest case being seventy-one and the youngest nineteen.

*Read at a meeting of the Tuscaloosa County Medical Society, October 9, 1933.

TABLE I

CLASSIFICATION—FIRST ADMISSIONS			
Year	With Neuro-syphilis	Total White Male	Percentage Neuro-syphilis
1921-1922	20	383	5.2
1922-1923	21	313	6.7
1923-1924	28	328	8.5
1924-1925	19	294	6.4
1925-1926	22	311	7.0
1926-1927	20	320	6.2
1927-1928	25	308	8.1
1928-1929	28	396	7.0
1929-1930	29	368	7.9
1930-1931	28	217	12.9
Totals.....	240	3,238	7.4

TABLE II

CLASSIFICATION—NEUROSYPHILIS AS TO TYPE				
Year	Paresis	Tabo-paresis	Psychosis with Cerebrospinal Syphilis	Total No.
1921-1922	19	1	0	20
1922-1923	14	1	6	21
1923-1924	23	1	4	28
1924-1925	19	0	0	19
1925-1926	20	0	2	22
1926-1927	17	1	2	20
1927-1928	21	1	3	25
1928-1929	24	1	3	28
1929-1930	26	1	2	29
1930-1931	27	1	0	28
Totals.....	210	8	22	240

TABLE III

SEROLOGIC FINDINGS UPON ADMISSION			
—Blood Wassermann—		Spinal Fluid Wassermann	
Positive	Negative	Positive	Negative
216	24	235	5

TABLE IV

AGE OF PARETICS UPON ADMISSION		No.
Age		
Under 20 Years		1
20-24 Years		3
25-29 Years		7
30-34 Years		37
35-44 Years		77
45-54 Years		53
55-64 Years		35
65-74 Years		5
Totals		218

TABLE V

OUTCOME OF CASES OF PSYCHOSIS WITH CEREBRO-SPINAL SYPHILIS			
Living Outside of Hospital	Now in Bryce Hospital	Died in Bryce Hospital	Furloughed from Hospital 11—of whom 2 are known to have died
5	4	2	

The cerebrospinal type of neurosyphilis is not the principal study of this paper but the outcome of the cases as given in Table V is of interest in comparison with the other tables which are to follow on the outcome of paretics.

Of twenty-two cases five are now living outside of the hospital, four are here now, two died here, and eleven were furloughed. Of the latter only two are known to be dead, the outcome of the rest being uncertain, though we believe that many of these are still living.

By showing Table VI, the mortality table of general paralysis, before we show our results of treatment we are not being willfully humorous, but we do wish to emphasize that many paretics are so far advanced when they reach us that they die within six to twelve months. We would especially call attention to the year 1921-1922 when all cases admitted were dead within eighteen months. These received no tryparsamide or malaria. We wish also to state that the first case to receive tryparsamide (in 1923) is now living, though he is quite demented.

Table VII gives a comparison of cases treated with tryparsamide or tryparsamide and malaria with cases who received practically no treatment with tryparsamide. In the latter group fall those who were admitted before the advent of modern treatment, certain cases whose tendency to visual disturbances prevented adequate treatment with tryparsamide, three cases with a tendency toward exfoliative dermatitis and a number of very feeble cases in whom treatment was considered inadvisable.

TABLE VI

SHOWING NUMBER OF DEATHS OF GENERAL PARETICS BY YEARS

Year	No. Admitted	Number Dead			
		0-6 Mos.	6-12 Mos.	12-18 Mos.	After 18 Mos.
1921-1922	20	6	11	3	0
1922-1923	15	1	9	1	0
1923-1924	24	1	5	0	7
1924-1925	19	4	2	2	4
1925-1926	20	5	1	2	3
1926-1927	18	3	2	0	2
1927-1928	22	0	3	5	2
1928-1929	25	4	2	3	3
1929-1930	27	2	3	1	1
1930-1931	28	1	2	6	0
Totals	218	27	40	23	22

TABLE VII

COMPARISON OF OLDER AND NEWER METHODS OF
TREATMENT OF PARETICS

Older Methods

	Greatly Im- proved	Slightly Improved	Transi- tory Im- prove- ment	Unim- proved	Dead	Total
No.	0	2	0	8	67	77
%	0	2.6	0	10.3	87	

Newer Methods

	Greatly Im- proved	Slightly Improved	Transi- tory Im- prove- ment	Unim- proved	Dead	Total
No.	26	38	29	18	28	139
%	18.6	27.3	20.8	12.9	20	

The follow-up period covered two years. By adopting this time limit we covered the period in which practically all cases would have been dead according to the older statistics and it enabled us to include in our series the year ending September 30, 1931.

The seventy-seven cases who did not have adequate modern treatment include some cases who were so debilitated that the outcome would naturally have been unfavorable under any form of treatment, but we cannot overlook the fact that everyone of the twenty cases admitted in 1921-1922, before the use of tryparsamide and malaria, were dead within eighteen months. It is impressive to contrast that with the fact that 35% were improved in the 139 cases who received adequate treatment. Bunker³, in a review of 542 tryparsamide treated cases of paresis collected from the literature, found that 35% had full remissions of mental symptoms in contrast to our 18.6% who were markedly improved. However, Stokes and Wilhelm⁴ report only 14.8% remissions in a series of committed cases against 54% remissions in ambulatory cases. All of ours were committed, none were ambulatory, and practically all were advanced cases. Our death rate of 20% would have increased some if our follow-up period had covered five to seven years instead of two years.

In studying these 240 cases we ran across some interesting facts not included in our tabulations. Three of these cases developed exfoliative dermatitis; one of these received only tryparsamide, the other two received both tryparsamide and neosalvarsan.

Thirteen of our cases developed visual disturbances. We treated 163 cases with tryparsamide. So this represents an occurrence in 7.9%. Stokes⁵ reports subjective symptoms in from five to seven per cent and objective disturbances in from one to three per cent. Not all of our 7.9% proceeded to optic atrophy as the drug was stopped as soon as a suggestion of visual trouble was manifest. The maximum risk of eye complications is said to fall within the first eight injections. Seven of ours developed this complication between the first and fifth injections, three others before the ninth injection, but three did occur between the twentieth to twenty-second injection.

We have in the past treated thirty-seven paretics with malaria but only thirteen come within this study. These thirteen had previously received tryparsamide and many had greatly improved from this form of treatment. The added results from the effects of malaria were not striking.

According to current literature malarial therapy produces just about the same percentage of remissions as tryparsamide. Our small series in which the two treatments were combined would hardly serve to evaluate the two methods of treatment.

In two of the 139 cases artificial hyperpyrexia was induced by the intravenous injection of typhoid vaccine. One showed striking improvement but in the other the results were negligible.

Certain cases, especially late ones, do not tolerate tryparsamide well. It is quite possible to push late badly deteriorated cases or even some excited cases to their deaths. Such reactions are the exception rather than the rule. When such intolerance appears it is wiser to stop treatment than to continue.

We have found, with others, that clinical results almost invariably outstrip serologic response and that there is no necessary parallelism between clinical outcome and modification of the spinal fluid Wassermann reaction.

A maximal clinical response is consistent with little or no improvement in the spinal fluid Wassermann and a minimal therapeutic effect is equally consistent with an ultimately negative spinal fluid reaction.

Hinsie and Blalock⁶, in a study of 63 paretics under treatment in whom the blood and spinal fluids were tested once a year for five years, found a gratifying increase in the percentage of negative Wassermanns as the years rolled by. This is best shown in the subjoined table.

TABLE VIII

Time	Negative Blood Wassermann Per Cent	Negative Spinal Fluid Wassermann Per Cent
1st Year	9.5	6.8
2nd Year	12.7	13.6
3rd Year	14.3	16.9
4th Year	23.8	32.2
5th Year	44.4	59.4

We do not at this time have figures on a serologic check-up on all cases in our series but a recent examination of twenty-six patients supports the findings in this table. Of the twenty-six examined, sixteen had negative spinal fluid Wassermanns and eighteen had negative blood Wassermanns. Of the positive group six had both blood and spinal fluid positive, four had positive spinal Wassermanns and negative blood Wassermanns, and two had positive blood Wassermanns and negative spinal fluid reactions.

All recent observers emphasize the fact that the best clinical and serologic results in tryparsamide come only after seventy to one hundred injections.

Tryparsamide is not an exclusive form of therapy. It may be alternated with courses of standard treatment according to the general status of the patient and mercury or bismuth may be used in conjunction with it. We believe it best to give tryparsamide first in starting the treatment of a paretic and to continue for some time before alternating with other treatment. Then if a study of the patient, including his blood and spinal fluid Wassermann, indicates the need of salvarsan or of the heavy metals or both we feel that they should be given.

The problem of the treatment of the neurosyphilitic begins not in the admission ward of an insane hospital but in the office of the general practitioner.

If we are to accept Stokes⁷ statement to the effect that 50% of the patients with sero-positive primary syphilis who receive

only thirteen to twenty injections of arsphenamine and 40% of those who receive twenty-one to forty injections relapse, we must know that much early syphilis is inadequately treated. If we will accept the further statement that from twenty-four to twenty-six per cent of the cases of secondary syphilis have abnormal spinal fluids, we realize just how many potential cases of neurosyphilis the general practitioner sees.

We cannot recommend too enthusiastically the advisability of examining the spinal fluid of every case of syphilis before treatment is discontinued and the case dismissed. The spinal fluid of the usual syphilitic under treatment should be examined, if possible, by the sixth month.

In no other way can we pick up certain cases of asymptomatic neurosyphilis which may later prove to be real and insurmountable problems.

BIBLIOGRAPHY

1. Pagniez, P.: Malaria Treatment in General Paralysis, *Presse med.* 33: 717-719, May 30, '25.
2. Lorenz, W. F., and Others: Therapeutic Use of Tryparsamide in Neurosyphilis, *J. A. M. A.* 80: 1497-1502, May 26, '23.
3. Bunker, H. A., Jr.: Recent Methods in Treatment of General Paralysis; Brief Survey, *Am. J. Psychiat.* 8: 681-694, Jan. '29.
4. Stokes, J. H., and Wilhelm, L. F. X.: Tryparsamide in Treatment of Neurosyphilis; Study Based on Observation of 152 Patients for 18 Months, *Arch. Dermat. & Syph.* 11: 579-610, May '25.
5. Stokes, J. H.: Syphilis, Tice, Practice of Medicine. Vol. 111, p. 439.
6. Hinsie, L. E., and Blalock, J. R.: Treatment of General Paralysis, Results in 197 Cases Treated from 1923-1926, *Am. J. Psychiat.* XI, 541, Nov. '31.
7. Stokes, J. H.: Syphilis, Tice, Practice of Medicine. Vol. 111. p. 413.

The Surgical Ethic in Malignant Disease—There can be no general rule for the treatment of malignant disease in all parts of the body any more than there can be a general rule for the treatment of malignant disease in any special part of the body. The patient, as in all therapeutics, furnishes the first variable and his disease furnishes the second. It can, however, be stated categorically and absolutely that surgical excision is still the ideal method of treating cancer in all locations, even though other methods are frequently more expedient. For surgery is the single agent which entirely eradicates the disease. It is the single agent whose forces can be completely controlled. It is the single agent whose destructive capacity can be adequately gauged.—*Maes, New Orleans M. and S. J. Feb. 1934.*

THE PROPHYLAXIS OF LABOR*

By
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The inclusion of intensive and cautious prenatal care in the duties of the obstetrical attendant has furnished rewards of incalculable value to posterity. Its theme of thought being prophylaxis, the physician assumes an important role as defender and guardian. Alert in observations, conservative in deductions, prompt in decisions, the obstetrician has converted prenatal care into a golden-spun fabric of usefulness. Strange to relate, however, the theme of prophylaxis so faithfully observed throughout pregnancy is abandoned at the onset of labor and the medical attendant too frequently observes and conducts the act of parturition in a manner that provokes complications for both mother and child. Labor furnishes its own chain of untoward symptoms and when the medical management joins hands with the natural mechanism of this process, by contributing its part to the hazards of childbirth, maternal and fetal mortality statistics of an unsavory and unenviable character will be the result of the harvest.

There is never a period in pregnancy, labor or the puerperium in which ominous indices of impending trouble are not evident and their significance reducible to practical and helpful interpretations. A short discussion of the prophylaxis of labor is to be presented, with a consciousness that a review of hackneyed facts should arouse interest because of the attention that is bestowed upon them.

MATERNAL CONSIDERATION

It is stated without reservation that the maternal organism registers a clear cut and very definite reaction to labor. Of major importance, in this connection, is the problem of exhaustion. During the period of canalization the vital forces of the mother are subjected to a gruelling and devastating assault. Incapable of spontaneous relaxation, incident to the pains of labor, the woman experiences restless and sleepless hours and in addition becomes the victim of

anorexia. In addition to the foregoing, vomiting and lack of fluid intake promote dehydration and the collective result of these factors initiates an acidosis. The biochemical changes of destruction of body tissue are rampant and, when allowed to pursue an unchecked course, lay the predicate for further annoying and harassing sequelae. A record of temperature and pulse is the guide for the doctor. A rise of temperature to 100.5 and a pulse rate of 110 must be considered unsatisfactory and distinctly abnormal. Familiar with the exciting causes of maternal exhaustion, to wit, restlessness, sleeplessness and anorexia, it is obligatory to combat the forces with appropriate and immediate prophylaxis. Narcosis, administration of sustaining fluids and banishment of the omnipresent and interested audience of family and friends will insure a desirable and wholesome protection for the patient. It is a well known medical truism that lowered resistance provides a decided handicap to an individual when subjected to undue physical influences, whether in the form of disease or body strains. Maternal exhaustion in labor definitely creates lowered resistance, predisposing to hemorrhage and infection even in normal labor and delivery and certainly more so in abnormal labor and artificial delivery. A hint to the wise should be sufficient and the sinister specter of exhaustion should not be permitted to silhouette its foreboding shadow across the fertile fields of maternity.

Considering, next, purely mechanical problems in the prophylaxis in labor, attention is directed to the bladder, rectum, use of pains and delivery.

Apart from the comfort afforded the patient, the proper evacuation of the bladder and rectum during labor is an essential duty that reaps its own peculiar and compensating reward. Dystocia, malposition, ineffectiveness of expulsive efforts, inertia, bladder and rectal injury follow in the wake of over-distention of these structures. The presence of these tumefactions in the true pelvis, obliterating varying degrees of diameters, preventing engagement (especially in multipara) and arresting rotation, provides an *ipso facto* argument that the accoucheur is derelict and blameworthy of imposing upon the lives entrusted to his

*Read to the Association in annual session, Montgomery, April 18, 1933.

care unspeakable and unwarranted hardships and danger, whether viewed from a mortality or morbidity record. In a prolonged first stage of labor the bladder should be completely evacuated every four hours and an enema given every twelve hours. Fruit juices and milk should be administered every two to three hours to within approximately four hours of delivery.

If the woman, passing through travail, ever presents a picture of inquisition, it is observed in the use of pains. A digression must be made at this point. No one can deny that nature has provided an excellent muscular mechanism for the expulsion of the child, but an irresistible defense is made in behalf of the brief that holds that this natural mechanism is subjected to vicious abuse when acts contrary to its beneficent objective are permitted and attenuated. To resume: The doctor only should accept the burden of responsibility of the use of pains or bearing down efforts. To do otherwise is illogical. He ALONE is acquainted with the extent of cervical dilatation. He ALONE possesses the knowledge of catastrophic results from the ill-timed and ill-advised use of pains. Complete, full, thorough and unquestioned dilatation must have been attained before any attendant advises the use of pains. The phantoms of grief and disaster that pursue the heedless obstetrician when violations of this mandate are committed include over-rotation, fetal injury, cervical lacerations, ruptured uterus, maternal exhaustion inviting lowered resistance, inertia, vasomotor shock, contraction rings, tetanic uterus, and persistent and impacted malpositions. This roll call of sinister entities furnishes a potent and elaborate nucleus for the "rogues' gallery" in obstetrics. If the woman must fulfill the biblical ordination of bringing forth her child in sorrow, the physician can do much to assuage the cross of pain of the Mater Dolorosa. She should be instructed to use the pain at its acme, using the increment and decrement for inhaling an anesthetic. The acme has the drive, just as the downward swing of golf has its momentum at the time the ball is struck. During expulsive efforts a digital exploration, per rectum, should be made to determine the descent, extension, flexion and rotation of

the vertex. Should progress be retarded after a test of the second stage, one of two things should be decided—either rest under further narcosis or delivery by accouchement force. The evaluation of labor pains cannot be over-emphasized. To be governed by the reaction of the patient invokes calamity and disappointment. The sensitive individual will make such an outcry over moderate pain as to create the impression of a furious and unrelenting labor. In the wake of such conduct, the obstetrical attendant becomes stampeded over the apparent lack of progress and initiates steps for delivery prematurely and ill advisedly. The opposite is true of the real heroine in labor. Without a murmur, the agonies of labor are endured and, as a consequence, the physician stands by, awaiting nature to take its course and, mayhaps, disregarding signs of maternal and fetal distress. The character of labor pains must be appraised by the doctor—recurrence, duration, severity of contractions and especially the degree of relaxation of the uterus between pains will serve as faithful and unerring talismen for the watchman on the highway of posterity. As compensation for such services the development of tetanic uterus and contraction rings are early recognized and offer the opportunity for sane and far-reaching prophylaxis.

It is too much to expect this paper to deal with a detailed discussion of the use of forceps and version with extraction. The obstetrical operator must select the procedure best adapted to his qualifications. However, in permitting such latitude, there is never justification for a renunciation of time honored, universally accepted and traditional tenets regulating obstetric surgery. The good of the operation *per se* never fails, but the indication and contraindication for its use, as well as the operative technique, must bear the onus—must assume the responsibility, must withstand the assault of criticism in the presence of failure. This is but another way of remarking that the end result of obstetrical operations must be reduced to the equation of judgment *versus* technique, on the part of the operator. The assertion is ventured that a majority percentage of labor complications follow in the wake of too long a delay while the balance is caused from haste

—both errors eventuating from a total disregard of prophylaxis.

The intent of the foregoing remark does not preclude an adherence to the dictum, there should be no haste in surgery. This virtue of technical and mental habit is engulfed in the personal characteristics of the operator. Equipped with knowledge and well fortified with mechanical proficiency, the well groomed operator may tread where the timid, dependent and inexperienced man may fear the quicksands of disaster. To be more explicit: The original complications of labor when handled early are less formidable than when a temporizing action is followed. For instance, a prophylactic version in the presence of an irritable uterus leading to contraction ring and tetanic uterus is more wholesome than a delay that will necessitate delivery by forceps. Again, a persistent posterior position tending toward impaction, in the presence of a cervix that does not dilate, but becomes dilatable, is best handled by a timely version. Further, application of forceps, with the vertex passed the bony outlet and in poor extension, is preferable to the use of pituitrin that cannot alter the flexion or extension of the head. From such thoughts it is cogent reasoning to assert that the obstetrical attendant CANNOT and MUST NOT work on a time equation. As the evolution of labor proceeds, the developing problems must be handled as and when recognized.

FETAL CONSIDERATION

During labor the child *in utero* is subject to danger from compression of the head, the cord and placenta. The cranium contains the vital centers; the cord carries the life blood; the placenta is the blood vessel medium between mother and child. All three structures are endangered by the forces of parturition and remain potential and omnipresent factors of consideration from the onset of labor until its conclusion. The unborn child radios its distress through its heart. Rate and quality of the fetal heart are the only signs for guidance. The writer feels that an increased rate is more ominous of the fetal condition than one that is slowed in rate. It is a personal conviction that a fetal heart of 160 is significant of cranial pressure while one of 90-100 is responsive to funic and placental pressure.

In the first instance resuscitation is difficult, while in the latter response to revival measures is more immediate and successful. It is the difference between injury to vital centers and the mere impediment of circulation. When confronted with any one of the aforementioned eventualities, the time and method of delivery is of paramount importance.

There is an ideal fetal prophylaxis to observe during labor. Upon rupture of the membranes, a vaginal inspection for prolapsed cord should be made. Should no loop be visible, the heart should be observed after each pain over a period of twenty to thirty minutes. After the rupture of the membranes, vigilance should be exercised in observing for the passage of meconium or meconium-stained fluid. The portent of this sign in a vertex presentation should be respected and properly appraised. When the woman goes through the second stage spontaneously and naturally, the fetal heart should be observed every fifteen minutes. The medical attendant must not permit the child to enter a profound labor shock and then expect it to withstand the additional shock of an artificial delivery, no matter the type of operation elected. Accouchment force to a child under such circumstances is equivalent to a surgical operation on a patient in shock. We are conversant with the procedure of the good surgeon when treating individuals in shock. Then, the same surgical principle should be practiced in obstetrics.

CONCLUSION

Prophylaxis in labor is the sheet anchor of safety. It is the impregnable bulwark of defense for mother and the unborn child. The responsibilities of obstetrical duties are not surpassed in any phase of medicine. A dual responsibility rests upon the obstetrical attendant—one demanding a restoration of the mother to a life of health and service and another insuring a protection of the newborn from injuries resulting in mental and physical handicaps. A storm of the elements is usually foreshadowed by infallible warnings, and man, obedient to the first law of nature, that of self preservation, prepares for the intensity and the unknown workings of the storm. Similarly, obstetrical storms are forecast by un-

mistakable signs, of an interpretative nature by the physician. No better plan of fortified protection can be bestowed upon the two lives in the balance than a faithful, unswerving, consecrated allegiance to *prophylaxis*.

If the obstetrician's interest cannot be aroused from a scientific viewpoint, may not sentiment be aroused by reference to two stanzas of the poem by Mrs. Southey entitled "The Dying Mother to Her Infant"? For depth and force of natural pathos one may challenge our literature to produce a more perfect specimen.

"But who will speak to thee of her?—The grave-stone at her head

Will only tell the name and age and lineage of the dead:

But not a word of all the love—the mighty love for thee

That crowded years into an hour of brief maternity.

To breathe thine early griefs unto, if such assail my child:

To turn to from less loving looks, from faces not so mild.

Alas? unconscious little one, thou'lt never know that best,

That holiest home of all the earth, a living Mother's breast."

THE USE OF LOCAL ANESTHESIA IN FRACTURES*

By

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The reduction of fractures under local anesthesia is not a new procedure. As long ago as 1885 it was attempted by Conway, and successfully reported by G. Lerda in 1907 and Quene in 1908. Since that time, with less dangerous cocaine derivatives such as novocaine, tutocaine, and neocaine, and the greater development of local anesthesia as a routine procedure for nearly all surgical conditions, this procedure has become more generally used. Lorenz Bohler of Vienna reports, in the *Arbiter Unfall Krankenhaus*, its successful use in over three thousand cases of all types of fractures, without infection, injury, or intoxication.

*Read at a meeting of the Etowah County Medical Society, Gadsden.

The object¹ of all anesthesia in the treatment of fractures is the relief of pain, both due to the trauma of the injury, which is aggravated by the slightest movement, and to relieve the pain due to manipulation in the reduction and application of support.

General anesthesia is never needed for reduction of fractures since local, regional, nerve block, or spinal anesthesia can be used in every case, both adults and children, with more ease, less danger, and with promise of better results.

The indication for the use of local anesthesia is an unreduced or improperly reduced fracture, either recent or old, simple or compound, which needs manipulation.

In recent fractures injection of the hematoma, as so successfully carried out by the Bohler method (described below), is simple, successful, and without danger.

In compound fractures, where the hematoma is not intact and the novocaine solution does not completely infiltrate the entire hematoma, because of leakage through the external wound, and in old fractures where the hematoma is well organized, it is necessary to inject the whole circumference of the bone.

Spinal anesthesia or brachial plexus anesthesia is indicated in fractures over two weeks old, in difficult fractures and dislocations of the pelvis and in fracture of the upper and lower extremities, especially where there is great trauma locally or elsewhere—as of the thorax, lungs, bladder, or urethra.

The advantages of local anesthesia are numerous. The more important are that the anesthetist can be dispensed with; there is no general disturbance as is associated with a general anesthetic; the patient can go to the x-ray room alone and cooperate with the roentgenologist in taking the pictures; deformity can be corrected several times if necessary and the fluoroscope can be used to better advantage with the aid of the patient; relaxation of the muscles is much more pronounced than under shorter anesthesia; local anesthesia lasts two to three hours and can be repeated if necessary; hospitalization is not necessary in the cases of less severe fractures; the patient

1. Rice, E. E.: Local anesthesia in treatment of fractures, *J. Oklahoma M. A.* 24: 122-123 April '31.

can go home unassisted after a reduction; aged people and those with hypertension, a decompensated heart or pulmonary or renal disease can stand a local infiltration where general anesthesia could not be used; post-operative pneumonia, passive and active congestion, shock, and alcoholic manifestations are avoided.

The technique of local anesthesia is very simple. The hematoma injection, as recommended by Bohler, is the easiest method and gives excellent analgesia. It is the method used in most cases.

Determination of the site of the fracture is important and should always be made by the x-ray, and by the location of the tender point and the deformity.

The skin is painted with tincture of iodine; there is no need of shaving the parts or of making other preparation. The needle is inserted until the bone is felt whereupon 4 or 5 cc. of a 2% novocaine solution, without adrenalin, are injected and the syringe removed from the needle. If a red colored solution escapes from the needle, it is known that the hematoma has been entered. Fifteen to twenty cc. of the solution are now injected. If, however, only a clear solution returns, the needle must be shifted until the hematoma is punctured. If there is a comminution, or if more than one bone is fractured, each site of fracture must be injected. As the pain disappears at once, the patient should be prone during the injection, lest he attempt to use the extremity and thus cause further injury.

A 2% solution of novocaine is used because it gives quicker, more complete, and more prolonged anesthesia than the usual $\frac{1}{2}$ to 1% solutions. Moreover, it is without danger as a smaller quantity is necessary though as much as 50 to 60 cc. may be injected with safety.

The amount of solution depends upon the size of the hematoma, the location of the fracture, and the amount of damage done to the surrounding tissues. Enough of the solution should be used to induce good anesthesia, since there is little danger of using too much novocaine.

In compound fractures the needle should be inserted through the sound tissue and not through the traumatized and potentially infected tissues. In addition to infecting

the hematoma, it may be necessary to inject around the bone also.

Bohler says, "if the fracture is a few days old and the hematoma in process of organization, it is impossible to inject directly into it with success; in such cases we inject the whole circumference of the bone. In fractures which are over two weeks old it is better to use the anesthesia of the brachial plexus for the arm (Kulenkampff) and spinal anesthesia for the lower extremity."

Carothers has now had 300 cases in his own practice, and the house surgeons at the Cincinnati General Hospital have used this anesthetic in over 600 cases in addition. At no time have any of them encountered any infections which could, in any way, be traced to the anesthetic.

Highsmith (*Southern Medical Journal*, September, 1930) says: "Since 1924, we have employed regional anesthesia by the nerve block method for the reduction of fractures and dislocations where general narcosis was contraindicated. Gradually it has become our procedure or preference in this line of work."

According to Carl O. Rice, infiltration anesthesia in fractures is a simple, safe and satisfactory procedure. It can be employed in all types of fractures requiring analgesia and relaxation. He is convinced that anyone giving this method a trial will be pleased with the results. He has employed it in over 75 fractures of the forearm and 17 assorted fractures and dislocations.

It can readily be seen that the use of local anesthesia in reducing fractures has long since passed the experimental stage. Although it was stated in the beginning of this article that the first successful reduction with local anesthesia was done in 1907, it is interesting to note that practically all of the references have been written in the last three or four years.

While it has not been the writer's privilege to do or see a large number of these he is convinced that this has been one of the outstanding developments in the minor surgical field during the last two decades; and the surgeon who takes advantage of this simple procedure will relieve himself and his patient of much unnecessary worry and discomfort.

RESPIRATORY DISEASES IN
CHILDREN*

By
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As the years roll by, great strides are being made in the realm of medicine, both prophylactic and therapeutic. The communicable diseases of childhood are gradually succumbing to progress. Gastro-intestinal disturbances, and particularly the summer diarrheas, are well under control where a good milk and water supply is available. But, like the poor and taxes, we seem to have the respiratory infections with us always. It is rather disheartening to recall how little progress has been made in the control of infections of the respiratory tract during the past twenty-five years. The most embarrassing moments of my professional life have been when mothers have presented their children to me with the statement, "My child is just starting on a fresh cold. I have brought him early so you may stop it." The chief advances that have been made have been in the field of surgery. The nasal accessory sinuses and empyemas are unquestionably treated more satisfactorily to-day than a quarter of a century ago.

It is manifestly impossible to completely cover the field of respiratory diseases in the short time at our disposal. I am therefore going to ask your indulgence in permitting me to talk at random, stressing the points that I think most important.

Common Head Cold: My frank opinion is that our treatment has little effect on the duration of an ordinary cold.† A cold in a certain individual may last only twenty-four to thirty-six hours. We pat ourselves on the back and feel that we have really accomplished something. On the very next patient, we try the same treatment very energetically only to have the cold hang on for a couple of weeks.

Before you decide that I am too cynical, let me assure you that I am quite confident

that by proper treatment these cases can be benefited as to comfort and complications. It is not necessary to go into detail on this subject as the common procedures are familiar to all of you. However, I do want to stress the importance of keeping the nasal passages well ventilated. Acute otitis media and involvement of the various nasal accessory sinuses are less likely to occur when this is done. Various forms of ephedrine are very useful where there is acute nasal blockage. In children, a 10-20% solution of neosilvol in 1% ephedrine sulphate is quite effective. The effect lasts longer if this is followed by liquid albolene in five minutes. It is well to remember that if ephedrine is used over a period of several days, it may not only lose its effect but may actually cause increased nasal congestion. In these cases, it should be stopped immediately. One-quarter of a grain of iodine with one grain of phenol in one ounce of liquid albolene will then be useful.

A hot bath will relieve nasal congestion temporarily. Care must be taken, however, to keep the patient well covered afterward so that fresh cold will not develop. In spite of popular opinion to the contrary, I do not believe that catharsis will cure a cold. While it is well to promote intestinal elimination by mild laxatives, I think excessive purgatives should be condemned. Castor oil is the great cold remedy. It promotes elimination from the bowel by irritation of the intestinal mucosa. When mucous membrane is irritated, it secretes mucus. When this mucus is seen in the stool, the mother feels that the "cold" is being eliminated while in reality, the "cold", as she calls it, is a product of the intestinal tract and not of the upper respiratory passages.

The prevention of head colds depends on avoiding contact with upper respiratory infections. People become frantic following exposures to scarlet fever and diphtheria but lose sight of the fact that a common cold might be the forerunner of very serious trouble. A child that is over-clothed is much more apt to develop a cold than the child who is clad very lightly. He can stand chilling better than he can overheating. Good nutrition, fresh air, sunshine, cod liver oil, and proper daily bowel elimination need only to be mentioned. Cold

*Read at the November 1933 meeting of the Walker County Medical Society, Jasper.

†In the December 23, 1933 Journal of the American Medical Association, Diehl reports interesting results from opium derivatives. He also states that 35% show rapid improvement without any treatment.

vaccine seems to be a satisfactory prophylactic in about forty per cent of cases.

Otitis Media: Every sick child should have his ears watched carefully. This is especially true when the respiratory tract is involved. Otitis media may exist with or without pain and with or without fever. Nausea and vomiting or diarrhea may be the chief symptoms of an abscessed ear. In fact, with the present excellent water and milk supply in Birmingham, I see more cases of diarrhea due to otitis media or other types of upper respiratory infections than I see from improper or contaminated food. The diarrhea will not cease until the infection is properly treated.

An old surgical axiom is—when pus is present, drain it. This holds true for purulent otitis media. I have never seen any harm result from opening an ear but I have seen considerable damage result from delayed paracentesis. One frequently hears this statement from the parents: "Doctor, I hate to have the ear opened because I understand that once the ear is punctured, it is more likely to have to be opened again in the future." Paradoxical as it may seem this statement is both correct and erroneous. An ear that has abscessed once is certainly likely to do the same again. However, this is because the predisposing factors are still present and not because the drum membrane has been incised.

Warm 5% phenol in glycerine will relieve earache but I feel that it has no influence on the infectious process behind the drum membrane. I feel that I have seen several cases of otitis media subside after filling the canal with ice water. I do not see why this procedure should cause any improvement but it apparently does in some instances. The most satisfactory treatment other than paracentesis is to keep the nose well ventilated. When the child has repeated attacks of otitis media, removal of the tonsils and adenoids will usually cause cessation of the attacks.

If you will only watch your cases for abscessed ears and make an early diagnosis, I shall feel that this paper has been justified.

Sinuses: Time will not permit a detailed discussion of sinus infections. I merely wish to call to your attention the fact that many cases are unrecognized. Children,

four or five years of age or even younger, may have definite sinus involvement. I recently had a five-year old girl who presented a cloudy sphenoid sinus on x-ray examination. Irrigation of this sinus demonstrated the presence of yellow pus.

Many chronic coughs are due primarily to sinus diseases rather than to lung pathology. This type of cough is more likely to occur when the child first lies down and again in the early morning. The cough is apparently due to post-nasal drainage and irritation of the pharynx. Another factor is also present. If the chests of these children are x-rayed, the roentgenologist will probably report increased hilus shadows on both sides with considerable peribronchial thickening, suggestive of tuberculosis. These shadows are apparently secondary to the diseased sinuses. This secondary infection may then contribute to the cough. A negative intradermal tuberculin test will aid in eliminating the diagnosis of tuberculosis. It is now my practice to do the tuberculin test before x-raying the chest as this will save the parents several days of anxiety when the radiographic report is made. It is important to remember that these children may not have any symptoms directly referable to the sinuses, such as headache or nasal blockage.

When you suspect a child of having a sinus infection, x-ray examination of the head should be made. A negative examination by nasal speculum and transillumination is not conclusive.

When definite sinus involvement is found, it does not mean that operative procedures are necessary. I feel that the treatment should be left in the hands of a competent rhinologist.

Bronchitis: Every year I see a number of children with chronic, non-specific bronchitis. Some of these children have an acute onset with fever of 102-3. After two to three days, the temperature begins to range around 100. The child does not seem particularly sick but the cough and rales continue in spite of mustard plasters and various drugs. I give these children mixed pertussis vaccine at intervals of two days. This is in reality non-specific protein therapy rather than specific vaccine treatment. Whether the child is six months or six years of age, I give 0.5 cc. at the first dose. Sub-

sequent doses are 1.0, 1.5 and 2.0 cc. If any injection should be followed by temperature as high as 102, I repeat the dose without any increase in amount. This procedure has given me uniformly good results. An important point to remember is that the vaccine should not be given during the acute stage. Wait until the temperature is ranging at 100.

Pneumonia: Lobar pneumonia in childhood is quite different from pneumonia in adults. It is harder to diagnose but the treatment is simpler and the mortality should be much lower. In infants under two years of age, the mortality rate is higher but still this disease is not as dangerous as its reputation would have you believe.

In contrast to the adult, the diagnosis of lobar pneumonia in childhood is usually, or rather should be, made on general symptoms and before the lungs show any pathology on physical examination. The usual story is that the child has had a mild cold for several days when suddenly the temperature rises to 104. There may or may not be an accompanying chill. My first thoughts are always otitis media, pyelitis and pneumonia. Examination of the ears and urine reveal them normal. If the patient is a girl, I ask the mother for another urine specimen. The patient may or may not seem toxic. I feel that the pulse-respiratory ratio in childhood is unreliable. In the early stages, the respirations may not be particularly labored. Careful examination of the chest will probably reveal no pathology and the same is true of roentgen examination.

If aspirin and an enema fail to reduce the fever perceptibly, I am reasonably sure of the diagnosis of pneumonia. This opinion is strengthened by finding an elevated leucocyte count.

On the second or third day, a slight impairment of resonance on percussion, with a diminution in the breath sounds, should be found over the involved lung. This is in contrast to the dullness and bronchial breathing found early in adult pneumonia. It is not uncommon for an inexperienced person to locate the pneumonia in the wrong lung. They interpret the suppressed breathing as the normal sound and the actual normal breathing as exaggerated, as they have learned to expect with lobar

pneumonia. In a few hours, the suppressed breath sounds become bronchial in quality and then they increase to loud bronchial breathing. As the breath sounds become louder, the dullness on percussion becomes more marked. Fine crepitant rales rarely appear until within twenty-four hours of the crisis, which occurs between the third and seventh days.

It is not unusual for the chest to remain free of physical signs of pneumonia until just before the crisis. A year ago, I made a diagnosis of lobar pneumonia in a five-year old boy at the Hillman Hospital. He ran a typical course with fever remaining around 104. When I made rounds on the morning of the fifth day, the patient's temperature was normal and he wanted to sit up in bed and play. I examined his chest very carefully but still found only normal breath sounds throughout a resonant chest. I told the interne that in spite of these negative findings the diagnosis of pneumonia would stand. At that time, I felt that the pathology was probably at the right apex as it is frequently impossible to detect positive findings in this location. However, on the following day, there was frank consolidation of the left base posteriorly with loud bronchial breathing and numerous fine crepitant rales. These findings had developed in spite of the fact that the temperature had been absolutely normal for over twenty-four hours.

In a recent round table discussion of pneumonia at the annual meeting of the American Academy of Pediatrics, it was suggested that the consolidation of lobar pneumonia might be due to an allergic reaction to the pneumococcus. The delayed consolidation in this patient could then be explained by a delayed allergic reaction.

Due to the absence of positive chest findings during the first several days, the physician may feel uncertain of his diagnosis. If the child should show tenderness and rigidity in his right abdomen, which is not uncommon with right lower lobe pneumonia, he is in danger of the surgeon's knife. It has been facetiously remarked that no man should consider himself a full-fledged surgeon until he has operated upon a case of pneumonia with the mistaken diagnosis of acute appendicitis. The pneumonia patient is usually more toxic, has a cough and

the tenderness and rigidity are more likely to be in the right upper quadrant; also, the rigidity and pain are likely to be more prominent than is the tenderness. I should add that where doubt as to the diagnosis continues to exist, it is better to operate on a case of pneumonia than to permit an appendix to rupture. I have seen two cases of acute appendicitis develop coincidentally with pneumonia.

The ideal treatment of pneumonia is simple: complete rest, liquids, nourishment and elimination. I do not believe that there is any drug that exerts a beneficial effect on the disease process. I fully realize the difficulties encountered in private practice if you do not give medicine. You must let your conscience be your guide. However, let me admonish you not to use any drug that might cause nausea or vomiting.

Mustard plasters or external heat will relieve pleuritic pain but have no beneficial effect on the pneumonic process. I am usually able to fight off the suggestion of mustard plasters by explaining to the parents that patients with pneumonia die from exhaustion and failure of the heart rather than from the pneumonia itself. They are told that absolute rest is essential and that this is impossible if the child is disturbed every three to four hours for a plaster. Furthermore, the child usually screams while the plaster is in place so that it is actually harmful on account of the resulting exhaustion. I am willing to admit that some parents will not follow this line of reasoning merely because they have known of some child to get well following the use of onion or mustard poultices, but such is the reasoning of the laity.

I do not worry about the lack of nourishment intake with these children unless the child is malnourished but I do insist on fluid intake. Transfusions are of value in anemic children. Mild laxatives are satisfactory for a daily stool. Excessive catharsis is exhausting and serves to deplete the body fluids.

If the child needs heart stimulation, caffeine or coramine are the drugs of choice. I do not believe that digitalis is of any value. The cough should be sufficiently controlled to permit sleep by codeine or paregoric. However, do not give enough to produce severe constipation and distention.

Oxygen therapy is the latest addition to our armamentarium. I believe that the successful treatment of pneumonia with oxygen depends on its early use; that is, it should be used before the patient is suffering with air hunger. If you wait until the patient actually needs oxygen, it is too late to give it to him with success.

The question of fresh air usually arises. There are many ardent advocates of cold air. While these patients do well in cold air, it is the fresh air that they need. A number of years ago, the Boston Children's Hospital treated a series of cases of lobar pneumonia by putting them out on the porch in sub-freezing temperatures with snow on the ground. They were wheeled into the ward only for feeding and elimination. This treatment yielded excellent results and the staff was congratulating itself until the chief came along and remarked that the reason such good results were obtained was because it was too cold to go out on the porch to bother them. The result was complete rest and recovery. There is a good lesson in this observation. It may be aptly said that the correct treatment of pneumonia is to exert an intelligent inactivity. Do only that which is necessary for the child and omit all other procedures. I am confident that in the past the mortality from pneumonia has been increased by overtreatment.

Time prohibits the discussion of bronchopneumonia, influenza, empyema, etc.

In conclusion, I should say that the best treatment of the respiratory diseases is prevention. Good nutrition; proper bowel elimination; working, playing and sleeping in fresh air or well ventilated rooms; proper clothing so as to avoid over-heating; avoidance of fatigue and avoidance of contact with infected individuals are all important. If this regime can not be attained and an infection of the respiratory tract is contracted, then complete rest in bed is the first consideration. This is followed by symptomatic treatment. Finally, let me again urge you to be on the alert for otitis media and sinus infections.

Cesarean Section—Vaginal cesarean section is the operation of choice under certain conditions. Its use, however, is limited to cases before the seventh month or thereabouts—never under any circumstances to be used at term.—*Potter, Texas State J. Med. Jan. '34.*

NEW USES OF OLD DRUGS*

By
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Modern medical literature is replete with accounts of spectacular operative measures; complex electrical machines for both surgery and diagnosis; magic-working new remedies; yawn-inspiring dissertations on medical economics; and, last but not least, we find a few scattered papers dealing with the use of a drug in conditions other than the conditions in which we are accustomed to use it. This last topic is one which should interest all physicians, for it is in the administration of drugs that we become physicians. The author feels that the mere calling of your attention to one measure which would prove helpful in one case would justify this paper.

Glandular preparations occupy a prominent place in this particular field; it is probable that because of their very newness only a small proportion of their ultimate uses has been uncovered.

Iletin (insulin) has for eleven years proven its worth in the management of diabetes mellitus. It seems now to be gaining favor as an agent to make the non-diabetic gain weight. The exact *modus operandi* is beyond the scope of this paper. Insulin is being used for its nutritional effect in the management of such conditions as tuberculosis, pellagra, rheumatism, and idiopathic malnutrition. It seems proven that insulin causes a gain both in the number and size of the subcutaneous fat cells. This use for insulin seems a very distinct and palpable advancement in the management of malnutrition in adults.

Ovarian extracts have been reported as definitely benefiting that dreadful but royal disease, hemophilia. The rationale behind the use of these ovarian preparations in this condition is interesting. Males alone have the disease, but females transmit the predisposing factor. As the great difference between the two sexes lies in the reproductive organs it was reasoned that perhaps the ovary elaborated some substance that prevented the female from suffering

from the disease. It seems definitely proven that at least some of the males suffering from this disease are greatly helped by the administration of ovarian preparations.

Truly protean are the uses to which pituitary extracts are put. Among the most interesting is the use of pituitary extract in alopecia (baldness). Perhaps the treatment is worse than the disease. Bengston has reported the growing of hair on the heads of men previously totally bald by the frequent injection of small doses of pituitary extract.

The treatment of herpes zoster or shingles has heretofore been rather discouraging. As witness of this statement look to the legion of drugs recommended for its control. Their multiplicity bespeaks their impotence. The intramuscular injection of one-half to one cubic centimeter of pituitary extract often serves to relieve the symptoms markedly; the results are often truly dramatic. It is freely admitted by those who have tried this treatment that occasionally a patient is seen in whom the results are not so striking. A repetition of the dose will usually have the happy effect of ameliorating the symptoms. This form of treatment is to be used with local measures if the best results are to be obtained.

Truly old drugs are finding new usefulness. A two per cent solution of sodium chloride is being used intravenously in the treatment of ileus. It serves the double purpose of restoring chlorides lost in vomiting and of stimulating peristalsis. Glucose is sometimes added.

That Epsom salts or magnesium sulphate is an excellent saline cathartic has long been proven. It also finds a place in the armamentarium of the modern physician as a synergist for morphine and as an antispasmodic in its own name.

Quinine sulphate has recently been reported as being of benefit in the eradication of trichomonas vaginalis. This often overlooked disease is also the recipient of poor treatment in most hands, and no one questions the fact that it is very refractory to ordinary treatment. The introduction of a few capsules of quinine sulphate has been reported as very definitely benefiting a small series of cases and is truly a far cry from the laborious and complicated treatment advocated in the past. If effective,

*Read at a joint meeting of the Elmore and Tallapoosa County Medical Societies, Lake Martin, July 11, 1933.

this treatment should prove a welcome innovation to those patients and physicians who have tried everything to no avail.

Glucose or dextrose is now used in so many ways that it would be difficult to name a disease in which it cannot be used to good advantage sometimes. It may any day prove useful to physicians in this hot country to know that muscle cramps of heat exhaustion are regularly and suddenly relieved by the intravenous injection of fifty to one hundred cubic centimeters of fifty per cent glucose. This is usually to be supplemented by glucose given by mouth and a high carbohydrate diet.

Cow's milk has, since antiquity, been advocated in the prescriptions of physicians. Not so long has sterilized cow's milk been used as injections to stimulate the body's resistance to infection. Its field of usefulness extends from purulent ophthalmitis to pelvic inflammatory disease.

While the claims made for hydrochloric acid when injected intravenously in dilution of one to fifteen hundred seem exaggerated and oftentimes based on inconclusive evidence, it does seem to benefit definitely some patients in some conditions. It should not be expected more than any other measure to act as a specific in everything from infantile diarrhea to senile debility.

Tribromethanol which is marketed under the trade name of avertin is being used widely in this country and Europe. The fluid in correct dilution and measure is being used as a rectally administered analgesic and in some cases as an anesthetic. It is being found to be particularly useful as a basal anesthetic to be supplemented by an inhalation anesthetic. It is being mentioned here only because of its close relationship with our old agent chloroform.

Ergotamine tartrate, which is said to be an active alkaloid of ergot, has been used to some extent in the alleviation of idiopathic pruritis, both generalized and localized.

The recent increase in the use of cyanide for suicide has mothered an important discovery. The administration of fifty to one hundred cubic centimeters of two per cent methylene blue intravenously has seemingly revolutionized the treatment of this often fatal condition. The action seems as specific as any in medicine. However, it is to be

supplemented by the administration of carbon dioxide and oxygen. All three of these agents are old.

There are many other recently introduced uses for old agents and certainly we shall see more in the future. It is to be hoped that further trial and observation will justify the enthusiasm manifested by the early users of these measures.

BIBLIOGRAPHY

- Jones, O. S.: Insulin As An Appetizer, *J. Missouri M. A.* 29: 416-417, Sept. '32.
- Kimm, H. T., and Van Allen, C. M.: Hemophilia; Prevention and Treatment of Bleeding With Ovarian Extract, *J. A. M. A.* 99: 991-993, Sept. 17, '32.
- White, C. E.: Treatment of Hemophilia With Theelin, *J. Oklahoma M. A.* 25: 304-305, July '32.
- Bernstein, M. A.: Treatment of Joint Lesions in Hemophilia by Means of Whole Blood From Menstruating Women, *J. Bone & Joint Surg.* 14: 659-662, July '32.
- Bengtson, B. N.: Pituitary Therapy of Alopecia; Preliminary Report, *J. A. M. A.* 97: 1355-1358, Nov. 7, '31.
- Sure, J. H. and Bercey, J. E.: Quinine Insufflation Treatment of Trichomonas Vaginalis. Preliminary Report, *Am. J. Obst. & Gynec.* 25: 136-138, Jan. '33.

Clinical Notes

FIRST AID IN FRACTURES AND AUTOMOBILE INJURIES

By

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Fairfield

Editor's Note:—The special committee on fractures of the American College of Surgeons, appreciating the need for a greater dissemination amongst the general medical profession of the basic knowledge underlying the handling of fractures, has recently selected regional sub-committees for the purpose of further promoting this program.

Dr. Conwell is both a member of the central committee and chairman of the regional committee for the territory embracing Alabama. Consequently this article on "First Aid in Fractures" by Dr. Conwell is most timely and carries many useful suggestions.

A large percentage of fractures occur at points some distance from any hospital. This is especially true of those injuries caused by automobile accidents which are ever becoming more frequent. As a result physicians who do not ordinarily treat traumatic injuries are frequently called upon to render first aid to injured individuals where little or no equipment is available.

Since the World War the usefulness of

the Thomas arm and leg splints for the emergency treatment and transportation of fractures of the extremities has been stressed, but it is the exception to find such splint at hand when one is called upon to render first aid. If such splints are available they of course should be used where indicated. Ordinarily the only materials available are boards, bandages, cloth and padding. These can be procured practically anywhere and with them the resourceful physician can immobilize the average fracture sufficiently to enable the patient to be transported to a hospital without danger of adding to the gravity of his injuries.

A rapid general physical examination should be made, the purpose of which is not to arrive at an exact and complete diagnosis, but to determine whether the patient is seriously and perhaps fatally injured or whether the injuries are but trivial. As a rule, this will not necessitate removal of all of the patient's clothing. Major fractures of the extremities which will require immobilization for transportation are usually obvious, and further determination of the details of the fracture can be deferred until the patient is so situated that definite treatment can be begun.

If the patient is severely and dangerously injured, the emergency treatment has for its first objective the conservation of life. If in shock the patient should be given enough morphine to relieve the pain and should be kept warm and moved as little as possible. If open wounds are present, they should be covered with sterile dressings, and no attempt made to cleanse them. If the patient is bleeding, the hemorrhage should be stopped either with a tourniquet or a tight compress, depending upon the location and the severity of the hemorrhage. If a tourniquet is used and it is necessary to leave it on more than a half hour, the tourniquet should be loosened for a few seconds and then tightened again and at intervals of from twenty to thirty minutes thereafter. This is done to avoid gangrene.

It is much better to cover severely injured patients with blankets and allow them to lie on the ground until they can be splinted and moved in an ambulance to the nearest hospital. The tendency to load severely injured cases into the first avail-

able automobile and rush them to the nearest doctor's office or drug store where the superficial wounds are cleansed and dressed, while the patient may be dying of shock, is to be strongly discouraged.

The joints proximal and distal to any fracture should be splinted in order to obtain immobilization of the fragments. Major fractures in which there is any tendency for the fragments to move, should be splinted before the patient is transported, because the movement of the fragments causes great pain, damages the neighboring soft tissues, increases the hemorrhage and shock and may even result in the death of the patient. It was for this reason that the practice of splinting the wounded on the field was adopted by the various armies during the World War. It is said that the routine application of the Thomas splint on the field reduced the mortality from 80 per cent to 20 per cent in gunshot fractures of the femur. Since a Thomas splint is rarely available, a brief description of the methods of immobilizing major fractures by means of simple board splints may be appropriate here. Such splints afford sufficient temporary immobilization for emergency transport, but of course are not suitable for the definitive treatment of fractures. All splints should be padded with blankets, quilts, sheets, clothing, cotton or whatever may be available.

The ladder splint is efficient in spine or pelvis fractures and the materials for its construction can usually be procured. It consists of two long boards which are fastened together by three cross pieces. If hammer and nails are not available the cross pieces can be tied on. The splint is padded if material is available and the back of the patient's body is bound to it. It also serves as a litter and is also useful for patients with visceral injuries as well.

In simple fractures of the clavicle and minor injuries in the region of the shoulder all that is necessary is to place the arm in a snug triangular sling. In more severe injuries in the region of the shoulder a pad in the axilla, a scarf or band binding the elbow to the shoulder, a band binding the arm to the chest (this should not be too tight as it may compress the brachial vessels) and a sling to support the forearm and hand should be used.

Fractures of the shaft of the humerus, elbow fractures and fractures of the bones of the forearm, wrist and hand can be immobilized in board splints. Either a single long or two overlapping short boards can be used. Further immobilization of the arm can be secured by binding the arm to the side. The splint on the mesial surface should not extend too high in the axilla.

In fractures of the hip, shaft of the femur and knee, it is necessary to immobilize the lower extremity and the trunk and in fractures of the leg it is necessary to immobilize the thigh and foot. A certain amount of immobilization can be secured by binding the two lower extremities together but not in fractures of the hip or thigh.

In fractures below the knee it is not necessary to include the trunk, but it is desirable to include the thigh, and the shorter boards can be applied. If a pillow is available a very efficient and comfortable pillow splint can be applied.

SOME ABUSES OF OBSTETRIC PITUITRIN

By

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Note:—The Committee on Maternal and Infant Welfare is trying to stimulate added thought on the subject by presenting to the Journal each month a short timely article of interest to general practitioners as a whole. The following by Dr. Boulware is the first in the series.

Present obstetric statistics for the State of Alabama reflect no credit upon the medical profession. A survey of maternal mortality now under way will no doubt shed much light upon the factors involved but past studies definitely implicate the physician in a certain percentage of cases. One of the most important factors is the indiscriminate use of pituitrin during labor.

Pituitrin, although a most valuable drug, is a dangerous preparation if carelessly used. The injudicious use of it has resulted, and still results, in a definite toll of infant and maternal life.

To many, pituitrin is a synonym for rapid delivery. Either because duties are too pressing or patience too short, some physicians resort to this drug when no real indication exists,—often when actual contraindications are present. It is often given

when cervical dilatation is almost completed, and usually a rapid delivery results. Such a routine practice facilitates the departure of the attending physician but what of the welfare of the mother and child? The rapid, forcible and expulsive character of the delivery is certain to result frequently in such fetal complications as asphyxia and intracranial hemorrhage.

The maternal aspect is equally grave. Chronic cervicitis from lacerations, avulsion of pelvic tissues, and subsequent operations for pelvic relaxation and uterine prolapse are frequent sequelae. Third degree perineal lacerations are often of this origin.

Many lose sight of the fact that nature is usually quite an efficient mechanism in obstetrics. Needless stimulation of a normally contracting uterus makes a normal case an abnormal one and invites disaster. Many cases of uterine rupture have been reported following the administration of massive doses of pituitrin and doubtless many are not reported. Are not these possibilities, and they are likely ones, enough to make one hesitate before needlessly resorting to pituitrin in normal cases?

The use of the drug in cases of pelvic contraction and fetal malposition is also questionable. In a vast majority of the former we only hinder nature and endanger two lives. A most important feature of the labor mechanism in such cases is a gradual molding of the fetal head in its passage through the maternal bony pelvis. This molding requires time and normal contractions, not brute force. To attempt, by means of pituitrin, to force a head of normal dimensions through a contracted passage is to court trouble. Intracranial damage and rupture of the lower uterine segment are both quite likely, and labor is certainly not facilitated. A careful resort to forceps or version in cases of prolonged labor due to such malpositions as persistent occiput posterior and deep transverse arrest is much less dangerous than recourse to large doses of pituitrin.

The rather prevalent indiscriminate use of pituitrin in large doses during labor should be discouraged. Fetal and maternal safety, rather than expediency, should be worthy of consideration by every practitioner of the obstetric art.

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THE LEGISLATIVE JUMBLE OF THE NEW FOOD AND DRUG BILLS

The attention of the members of the Association is directed to the terse and spicy little article contributed by the Chairman of the Committee on Legislation and Medical Economics and appearing under the Association Forum in this issue of the Journal. This requires no interlinear reading to reach the conclusion that it is the desire of its contributor to have the profession at large, and more particularly Alabama's profession, shake off its lethargic attitude towards many of the burning issues now confronting our present social order, many of which carry direct, immediate and far-reaching implications for organized medicine. Such a vast horde of problems of a complex and intricate nature are presenting as to defy intelligent comprehension of all by any individual mind. In the haste to find some sort of solution, one frequently finds temporary expediency, coupled with the forces of greed and selfishness, totally dominating the legislative picture. A striking example of this is to be seen in the wrangle now staged in Washington in the effort to further protect the interests of a credulous public by strengthening and vitalising the present—but now outmoded—

Federal Food and Drugs Act enacted in 1906.

In the extraordinary session of 1933 the Department of Agriculture, to which is entrusted the enforcement of this Act, being acutely cognizant of its many present defects and weaknesses, sought to remedy these by having introduced a new bill known as the Tugwell or Copeland Food, Drug and Cosmetic Bill (S. 1944, H. R. 6110). The outstanding departure of this bill from the present antiquated one is the manner in which it sought to curb and regulate the many ludicrous claims of advertisers now being foisted upon an indiscriminating public both over the air and by means of the printed page. It may be further added that this bill had been carefully thought out by those to whom had been entrusted this important phase of governmental regulation and that it had received administrative approval and even the sanction of Mrs. Roosevelt, who has always manifested a lively interest in all things looking to social betterment.

The American Medical Association, while sympathetic to the broad principles of efficient regulation and control in all such matters, has not seen fit to place its unqualified stamp of approval upon the two original bills referred to above. That within this legislation had been injected sharp and forbidding teeth which menacingly frowned upon the blatant and unscrupulous purveyors of many foodstuffs, drugs, and household remedies may be quite true. But it is also true that the public interest is or should be paramount. The air by night, formerly considered so noxious because of the "miasma" arising from polluted soil and swamps, now fairly reeks, the country over, with a subtle blend of "sweet melodies" and smoothly-phrased misinformation. Of necessity, if the public interest is to be adequately safeguarded, there will be impingement upon the toes of the unscrupulously selfish. It is to be regretted that in the shaping of so important a piece of legislation as this, there might not have been complete understanding between the shapers and enforcers thereof on the one hand and the forces of organized medicine and of health on the other—the two forces most vitally concerned in the protection of the public's health. One must conclude, there-

fore, that such was not the case, inasmuch as the Board of Trustees of the American Medical Association, when giving consideration to this important matter merely adopted the following resolution:

"Whereas, The American Medical Association has for years protested against the inadequacy of the National Food and Drugs Act of 1906, because of which inadequacy the officers of the Government charged with the enforcement of the act have been and are unable effectively to protect the people against fraud and danger to health; be it

"Resolved, That the American Medical Association pledges its support toward procuring the formulation and enactment of effective national food and drug legislation adequate for the protection of the people".

The latest pronouncement, at this writing, from the American Medical Association is the editorial appearing in the December 9th issue of the Journal, which, while endorsing the principles embodied in the bill, withholds sanction of the bill itself. Per contra, The American Public Health Association, as well as other important health organisations, have, through suitable resolutions, passed at their annual sessions, gone on record as approving the original Tugwell Copeland bills. These bills were introduced in June of last year. Since their introduction committee hearings have been abundant, before which committees have been poured forth the mournful wailings of oppression and persecution by the self-seeking purveyors and the advertisers.

And the result:

A new bill in the Senate by Senator Copeland (S. 2000) which bears distinct earmarks of yielding to the importunities of the groups mentioned above; but by no means to the extent manifested by the new bill introduced into the lower house by Congressman Black (H. R. 6376) at the request, so it is reported, of the National Trade Conference, which has, for its prime objective, not the protection of the public but rather the interests of advertisers and of patent and proprietary medicines. Both these new bills are now pending in Washington and both are a recession from the high stand taken in the original Tugwell Bill. A compromise will be the likely result; as most legislation involving conflicting forces, eventuates in compromise. In

the meanwhile, it immediately behooves organised medicine and public health, whose interests, in an ultimate analysis, are everlastingly identical, to so marshal their combined forces as to procure for the public the best bargain and the most protection possible. At this writing, it appears impossible to predict just what compromise may be reached; yet it seems incumbent upon every interested member of the medical profession to make a fervid plea to his Senator and Congressman to lend his aid in behalf of the general public rather than to the selfish interests of any small group.

J. N. B.

A NEW TREATMENT FOR OBESITY

The prevention of obesity is an important part of every physician's practice, no matter what his sphere of interest. With advancing years overweight becomes an increasingly heavy handicap, and each of us is expected at times to give advice as to its correction. This is especially true today when it is stylish to be thin. Many fat persons claim that they are light eaters, but close scrutiny of the diet will usually show that they are deluding themselves and that in truth they consume excessive quantities of food; often they eat largely of concentrated foods of high caloric value. Students of nutrition are coming more and more to the belief that, except in the case of certain well-defined endocrinopathies, all fat people either eat too much or exercise too little, or both. The obvious remedy is to eat less. To many persons this is a most difficult thing; they cannot or will not deny themselves.

Many substitutes for grinding self denial have been devised but they seldom work. Among these is thyroid medication. Thyroid substance will surely reduce weight, but it is not without its ill effects, and careful physicians are willing to prescribe it only when the patient exhibits definite thyroid deficiency. There has recently been discovered, however, another substance, Alpha-dinitrophenol, which, apparently without producing the nervousness and other ill effects of thyroid substance, gives an effective stimulus to metabolism

and accomplishes an easily controlled reduction in weight. A group of investigators at the University of California¹ have reported very satisfactory results with Dinitrophenol. In a few instances disagreeable side-effects, such as brief gastro-intestinal upsets, a passing eruption, and disturbances in taste were experienced; and elsewhere was reported the death of a physician who took an enormous over-dose of the drug. In daily doses of 300 mgm. (5 grains), however, the California observers, without changing the patient's diet, saw very satisfactory reduction in weight and no serious ill effects.

Knowledge of this drug is still in the experimental stage and any physician who essays to use it should do so with the utmost caution. Too, in advising the obese and near obese, it should be borne in mind that reeducation of the taste and appetite is the most important part of treatment. No matter how effective the immediate reduction in weight, if the patient is to hold what has been accomplished he must learn to content himself with a properly restricted diet. Such reeducation of the appetite should never be omitted; with patience and reasonable self denial it can be accomplished. If, however, further experience with Dinitrophenol gives equally encouraging results it may for properly selected cases become a valuable aid in the dietary treatment of obesity. Until we know more of its effects under varying conditions a certain skepticism as to its value, and conservatism in its use, should be maintained.

J. S. McL.

1. Cutting, W. C.; Mehertens, H. G., and Tainter, M. L.: Actions and Uses of Dinitrophenol, J. A. M. A. 101, 193, July 15, 1933.

Tainter, M. L.; Stockton, A. B., and Cutting, W. C.: Use of Dinitrophenol in Obesity and Related Conditions, J. A. M. A. 101, 1472, Nov. 4, 1933.

Poverty and Disease—" . . . whatever diminishes poverty or increases the physical means of welfare has the improvement of health as one of its first and most evident effects. Therefore an important method of maintaining vital efficiency is to conserve natural resources—land, raw materials, forests and water. Only in this way can food, clothing, shelter and the other means of maintaining life be obtained. Conversely, the conservation of health will tend in several ways to the conservation of wealth."—*Editorial, J. A. M. A., Jan. 13, 1934.*

Committee on Legislation and Medical Economics

Under this heading will appear from time to time contributions from the committee, issued through its Bureau of Public Relations.

BECOMING OF AGE

Can a dry as dust subject be made interesting? Not always. Here is a try at it. Judge for yourself. There follow a list of questions sent recently to this committee.

What is the Committee on Legislation and Medical Economics?

Why was it established?

What are its practical and immediate aims?

What powers does it have?

Is it properly constituted to accomplish its purposes?

What restraints are set over it?

In all organizations from the League of Nations down to the Mickey Mouse Club there is one standard solution for all knotty problems which cannot be settled out of hand, dismissed or tabled. What is it? Everyone knows the answer. Appoint a committee.

Committees are harder to keep alive than young turkeys. And proposals and movements committed to them, like the mites on the turkey, die along with the foster-parent. Everybody soon forgets. And usually everybody is satisfied.

Organized medicine in Alabama is growing up. Jerome Cochran and his illustrious successors have in turn adopted, nursed, and, among them, reared the youngster, looking after his interests in large part while at the same time discharging their duties in the Department of Public Health. For this unselfish double service the medical man of Alabama can never be grateful enough. Nor honor them enough.

The population of the State has increased to nearly three million. The field of public health has widened. The Department of Public Health of the State under the courageous and wise guidance of its heads has grown into one of the most efficient units in the Union. Its demands tax the energies of the strongest man.

The medical body politic, composed largely of those in private practice, has at the same time come of age in a period of social

and economic upheaval. Becoming more conscious of itself as an organic part of the social order, and as an important class in society, it has realized the need of claiming its proper place in that society. It has awakened to the necessity of more aggressive activity, observing its interests threatened by the encroachments of more alert and more active social groups.

The founding of this committee represents an effort to translate that urge into action.

Here let it be remembered that the PUBLIC HEALTH SYSTEM is logically a socialized service belonging to the organic functions of the State. With experience and the trend of the times this has become sharply evident. Organized medicine in Alabama has never opposed that integration, but has wisely encouraged it.

On the other hand, the private practice of medicine offers the service of an art to individuals for a consideration. Under a competitive capitalistic system such as we have it cannot function otherwise, without becoming the slave of interests remaining independent of the government.

Paying unreserved tribute to the unselfish devotion of its leaders in the past, organized medicine in Alabama has reluctantly decided the day has arrived when it must declare its separate position, take its own affairs fully into its own hands, and under its own officers organize to fight by the side of its ally, the public health department, for the common good.

Slowly but surely it has become imperative that the President of the State Medical Association be no longer merely an of-

ficer holding an honorary position as a builder of programs who presides over the yearly scientific and business sessions; but a powerful leader entrusted with great responsibilities.

This man, who should be the strongest the profession can find in its ranks, cooperating with the State Board of Censors who may fittingly be regarded as his cabinet, must grapple with problems economic, political and social which press upon us. He must hold the profession together, keeping a solid front in the fight, when battle must be joined. The starting of constructive movements waits upon him to arouse sentiment for them. He must explain issues and measures to busy men, absorbed with the care of the sick.

There is bad legislation to be combated. Legislation to be promoted. Liaison must be constantly maintained with national and state organizations. Information must be secured. Facts, the basis of all sound conclusions, must be gathered. The flux of public opinion must be taken account of. Enemies, or misguided friends, are active in promoting social experiments in which the doctor is to be the guinea-pig. To aid in turning these aside, he can never be too alert.

The Committee on Legislation and Medical Economics is one instrumentality by which and through which this new leadership operates. It fills or should fill a vital need, for in a very real sense the life of the profession as it now exists may depend upon the solution of the problems with which it is concerned.

(To be continued in an early issue)

THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

THE FIGHT FOR HONESTY

REMARKS ON THE PROPOSED TUGWELL BILL

By

A. L. Glaze, M. D., Chairman

Committee on Legislation and Medical Economics
Birmingham

"How is it", a friend once asked a certain Englishman, "that you always manage to be so tactful? You never step on anyone's toes."

"I am at pains", he answered, "never to discuss anything of importance".

Those readers who are forty years old and over will remember Dr. Harvey Wiley, and the fight that was waged in Congress, and in the press, prior to the passage of the Pure Food and Drugs Act of 1906. It was a brave fight, and a bitter one. Then, as now, opponents of the legislation predicted ruin for the industries to be regulated by the proposed law. And, indeed, a few were

ruined, chief among them being those of the fakers who sold cocaine under the guise of asthma and catarrh remedies, advertised in church and lay periodicals.

A new day and a New Deal have been born since then. A new Food and Drugs Act is before Congress—The TUGWELL Bill.

It proposes to regulate the vicious flood of irresponsible advertising which in recent years has made America the happy hunting ground of the charlatan and the unscrupulous drug and cosmetic manufacturer. It is a violation of Federal Law (sometimes hard to enforce) to lie on the label of a bottle or a package of medicine or food. But exploiters of the public may at present exaggerate or misrepresent as much as they like so long as they do it in published advertisements or over the air.

The banking scandals which have grown out of the mad finance of the post-war years find a counterpart in the reckless development of the cosmetic and drug industries. Here, too, rugged individualism soon became rugged buccaneering. The weapon used to hold up the public was a well known principle of advertising.

That principle is this: Human beings will believe anything you make them want to believe, if it is often enough repeated. Paint the appeal in bright colors; tip it

with apparent scientific reasonableness; then drive it home.

The physician himself is as much a victim of this unregulated ballyhoo for gain as is the public. If proof of this were needed, the fact that many of the great drug houses of America are fighting this bill would furnish part of it. (An early issue of this Journal will publish specific facts on this point, in order that the profession in Alabama may judge for itself).

The doctor, as an informed citizen, should lend every support to this legislation. Those opposing it have money, influence, power and selfish interests. Many newspapers are either silent, or publish only the propaganda of the enemies of the measure, fearing loss of advertising.

In dealing with this matter, tact is not good form. There is much of importance to be said. A good fight must be fought, and won.

The doctor of Alabama, absorbed in the care of the sick, has more than once been good-naturedly charged with indifference to measures affecting the general public weal, unless his own pocket-book was threatened. In actively supporting the principles incorporated in the original Tugwell Bill, by writing his congressman and his senator in its behalf, he can once again disprove this friendly accusation.

DEPARTMENT OF PUBLIC HEALTH

BUREAU OF ADMINISTRATION

J. N. Baker, M. D.
State Health Officer in Charge

STATUS OF FEDERAL HEALTH PROJECTS NOW IN OPERATION IN ALABAMA

Because of the flexibility and efficient set-up of the health machinery of Alabama, the State has been able to cooperate fully with the Federal Government in providing work on worth-while health projects as part of the Government's program for re-employment. At the present writing, there are already under way five Federal projects, all of them of considerable magnitude. They are as follows: malaria control, community and school sanitation, the closing of abandoned mines, ecto-parasite survey in three areas, and a rat extermination campaign in twenty-one counties, the latter two projects being aimed at the control of ty-

phus fever, which has shown an alarming increase during the last two years.

MALARIA CONTROL PROJECT

This project was started on December 6. The report for the week ending February 3, 1934 showed the work under way in sixty-three counties in which 170 projects were being worked. It is estimated that these projects will serve a population of 228,061 persons and drain 75,068 acres.

The malaria control projects are under the general supervision of the Bureau of Sanitation. Through the financial assistance of the U. S. Public Health Service, there have been appointed two assistant state supervisors. In addition, there are four district supervisors and fourteen county supervisors drawn from the original Federal malaria quota. There were employed, for the week ending February 3, 1934, 3,018

skilled and unskilled laborers from the Federal malaria quota and 3,111 skilled and unskilled laborers from the county Civil Works Administration quota. The progress report for this week showed that there were completed during the week 115,986 linear feet of ditches, making a total of 654,187 linear feet of ditching completed to date. It is estimated that the total length of ditches to be excavated under this project will be 1,415,000 linear feet. Total labor cost provided for this, under the Federal malaria quota is \$332,790, with further provision of a small sum, \$8,000, for expenses in connection therewith.

In addition to the engineering work on malaria control, plans are under way for cooperation with the U. S. Public Health Service in making a malaria blood index of school children in fourteen counties to serve as a base line for measuring the results of the above projects. Some five thousand examinations will be made and will form a scientific base for measuring the future incidence of malaria in Alabama. There can be no doubt that the magnitude of the present drainage projects will have a tremendous effect in decreasing the malaria incidence of the State. It is rare that in the history of public health work the money can be found for such extensive drainage work, and Alabama is indeed fortunate to have been able to take advantage of this opportunity. It reflects the soundness of the foundation upon which public health work in Alabama is built.

COMMUNITY AND SCHOOL SANITATION

The second Federal project, with fourteen district supervisors and sixty-two county supervisors in charge, is one of community sanitation, now under way in thirty-nine counties. The Federal quota for this work calls for 1,513 skilled and unskilled workers and an appropriation of \$218,988 for labor. In connection with this project, there has been worked out a State Civil Works Administration project of school sanitation to provide for sanitation needed for an estimated 1,145 rural schools. This supplementary project calls for \$154,448 for labor and an equal amount for materials. The Civil Works Administration will furnish the amount needed for the labor and \$53,000 of that required for material. The

remaining amount needed for material will have to be provided by the communities in which the schools are located. It is too early to say just how much of this program can be carried out, but it has been agreed that the school sanitation program shall have priority over the community sanitation program and that the latter program will be undertaken only while waiting for the details of the school sanitation program to be worked out or as soon as this has been finished.

The effect of the sanitation project upon the health of the people of Alabama will be more difficult to measure than in the case of the malaria projects. This is so because there are so many more factors involved in the reduction of the disease and deaths from intestinal conditions so that the present attack is by no means as complete an approach to the problem as was the case with malaria. There should, however, be a distinct reduction and, what is more important, the work will have a tremendous educational value throughout the State in making the people of each county sanitation-minded. Because of this demonstration it will be an easier task to carry out similar campaigns for improved sanitation in the future.

THE CLOSING OF ABANDONED MINES

The purpose of the project for sealing abandoned coal mines as a protection to public water supplies, is: To so protect the abandoned mines that chemical action will not take place which will result in acid wastes from the abandoned mines entering streams used or available for use as sources of public water supply. The Alabama program is part of a Federal project originated and designed to protect public water supplies throughout bituminous coal mining areas of the United States. This project will be carried on in eight counties for which there has been allotted a Federal quota of 486 workers. The eight counties are Walker, Jefferson, Tuscaloosa, Winston, Marion, Bibb, Blount, and Cullman. The total labor cost provided is \$65,624 and the material cost is \$33,144, of which \$1,312 has been reserved for office rent, office supplies, chemical supplies, etc. This work is under the general direction of an assistant director of mines, with office in Bir-

mingham. Office personnel consists of one assistant, one chemist, one district supervisor and a clerk. For the week ending January 13 there were 333 men at work on these projects in Jefferson, Walker, and Bibb Counties. To that date there had been closed 627 openings and there had been tested sixty-five samples of water.

ECTO-PARASITE SURVEY

This project is under the general supervision of Dr. Gill, Director of the Bureau of Preventable Diseases. During the week ending February 3, there were employed 287 men and two women in Dothan, Mobile, and Montgomery. There is provided a budget of \$30,000 for labor, while the U. S. Public Health Service will provide the materials required in the work.

The objective of this program is to trap rats and comb them for fleas, which are then studied for identification and their relationship as carriers of typhus fever.

RAT EXTERMINATION CAMPAIGN

This program is being conducted from an appropriation made by the U. S. Public Health Service of \$225,000 for labor and \$2,100 a month for supervisors, and is under the general direction of Mr. Roy Moore, of the U. S. Biological Survey. This project is being carried out in twenty-one counties of Alabama in which there has been an incidence of typhus fever. The method for the extermination of rats in these counties is by means of poison. The project calls for 3,000 workers, plus twenty-one county supervisors.

There were 823 cases of typhus fever in Alabama during the past year with thirty deaths through November, compared with 237 cases and eleven deaths for 1932. The cases have continued to be confined largely to the counties in southeastern Alabama and the work on the present project of rat extermination has been confined to these counties. It is hoped that this attack upon typhus will be successful in stopping the further progress of this disease in Alabama. At the same time it is appreciated that there will be required similar campaigns in the future if typhus is to be entirely eliminated from the State.

BUREAU OF LABORATORIES

J. G. McAlpine, Ph. D., Director

AGGLUTININS*

THEIR SIGNIFICANCE IN VARIOUS DISEASES

5. Summary and Conclusions

From the previous articles in this series it will be seen that the interpretation of the agglutination reaction is a difficult problem. The necessity for a complete history in each case is apparent because agglutinins may persist for long periods after recovery in some diseases or they may be caused by unrecognized subclinical cases. Also non-specific production of antibodies must be considered. Therefore, until the results of any single agglutination test are correlated most carefully with history and clinical symptoms its value as an adjunct in diagnosis is negligible.

Each case must be viewed as an entity and there are no hard and fast rules for the interpretation of the various agglutination reactions. Nevertheless, past experience has given us a mass of data from which we can deduce certain general conclusions. This is evidenced by the facts which have been presented in the foregoing papers. That these conclusions may be available in concise form, the more salient points are summarized below.

In undulant fever, agglutinins are usually present in fairly high dilutions; i. e., in 1:300 or above. But in some cases none of these reacting bodies are demonstrable or they may appear in titers of only 1:15 or 1:30. Although most workers in this field are inclined to consider a positive agglutination reaction in the 1:80 dilution as significant, such results should be interpreted with caution. Since it has been proven that agglutinins for this disease persist for long periods and that there are undoubtedly many mild or subclinical cases, a careful study of the patient's history is often essential before a definite diagnosis can be made. Furthermore, because of the cross-agglutinations which frequently occur between *Bact. tularensis*, on the one hand and *Brucella abortus* and *Brucella melitensis* on the other, the symptoms and histories of

*Last in a series on the subject, the first having appeared in the October 1933 number.

all cases giving positive agglutination tests with *Brucella abortus* should be checked with the thought that tularemia may be a possibility.

In tularemia, the dilution is not so important because agglutinins in any titer may be significant, provided two factors have received proper consideration. First, since it has been proven that immune bodies may persist in the blood stream of recovered patients for years, past infection must be definitely ruled out. If the history is indefinite, several agglutination tests should be made; a positive result with a constantly increasing titer on subsequent examinations definitely indicates tularemia. Secondly, the importance of cross agglutination between *Bact. tularensis* and *Brucella abortus* has been noted above. There is, as a rule, enough difference in titer when both agglutination reactions are run to indicate the true infection, but in cases where there is not, a careful study of the history and symptoms plus the agglutinin absorption test, if necessary, will set the diagnosis straight.

Although typhus and Rocky Mountain spotted fever are undoubtedly caused by members of the Rickettsia group of microorganisms, patients of both give a positive agglutinin test with *Proteus* X19. A complete reaction in the 1:160 dilution, or above, is generally considered diagnostic. But there are cases on record in which flocculation has occurred in titers of 1:320 and yet the patient had neither typhus nor Rocky Mountain spotted fever. These may have been due to the stimulation of agglutinins by other pathogenic microorganisms or the reacting bodies may have persisted from a previous attack of either of these two fevers. Although there has been an impression that agglutinins for *Proteus* X19 disappear shortly after defervescence, more recent work seems to indicate that they may persist for a long time after recovery. Reactions in the 1:80 dilution are considered doubtful and second specimens should be submitted to the laboratory. The agglutination reaction is not as valuable in the diagnosis of Rocky Mountain spotted fever as it is in endemic typhus.

In this series, nothing has been said about the interpretation of the Widal reaction because it was thought that sufficient

had been written on this subject. However, a few important points will be brought out very briefly here. A positive agglutination reaction for this disease—and in this Laboratory 1:80 is considered significant—indicates one of three conditions: (1) Present infection. (2) Past infection. (3) Vaccination. Numerous means have been devised to separate the true infected individual from the ones who have agglutinins because of past infections or inoculations, but at present none of these are applicable to routine work. The best laboratory method for the diagnosis of typhoid is the cultivation of the *Bact. typhosus* from the blood or stools.

In conclusion there are three general points applying to all agglutination tests, which should be emphasized.

1. It takes time for the agglutinins to appear in the blood stream; a positive reaction is seldom found during the first week of the disease. Therefore, samples should not be taken before the 7th to the 10th day after the appearance of symptoms.

2. Too much reliance should not be placed on one test. When a doubtful reaction is reported on the first sample, the Laboratory will request a second specimen if the agglutinins are present in appreciable amounts. An increasing titer on subsequent examinations helps to clinch the diagnosis.

3. The agglutination reaction is of little value when considered alone. Since the reacting bodies frequently persist for long periods, and cross-agglutinations are not uncommon, careful correlations between histories and symptoms and laboratory reports are essential.

BUREAU OF PREVENTABLE DISEASES

D. G. Gill, M. D., Director

PREVALENCE OF COMMUNICABLE DISEASES DURING 1933

Below appears a table showing the number of cases of the various communicable diseases reported during 1933 as compared to those reported during 1932 and to the median of the past nine years.

	1933	1932	1924-1932
Typhoid	658	772	1333
Typhus	823	237	69
Malaria	4509	2203	3698
Smallpox	82	464	464
Measles	1729	291	5099
Scarlet Fever	1211	1459	1181
Whooping Cough	1652	1565	1565
Diphtheria	1572	1888	1800
Influenza	6947	30584	9976
Mumps	911	1126	925
Poliomyelitis	23	35	57
Chickenpox	758	1104	1535
Tuberculosis	3189	4366	4142
Pellagra	566	702	702
Meningitis	44	65	63
Pneumonia	2194	2855	4097
Syphilis	2064	1998	1848
Chancroid	26	39	106
Gonorrhea	1655	1352	2330
Undulant Fever	12	17	19
Rabies	3	1	0

It will be observed that as usual there were considerable variations in some diseases, particularly those diseases without any specific means of prevention. Measles, for example, after a very low incidence in 1932 showed a big increase and this increase will probably be continued into 1934. Influenza was epidemic late in 1932, and this epidemic continued on into the early months of 1933. Since that time its incidence has been very low. Malaria during the last few months of the year more than doubled the previous year's experience, and will provide an unusually large number of "carriers" for the 1934 season. It is to be hoped that the drainage work being carried on this winter with Civil Works Administration labor will check mosquito breeding sufficiently to off-set this threatened increase.

The most striking increase in any disease, however, was that which occurred with typhus fever. This disease first showed an increase in incidence during 1932, but it became a serious problem during the past year. Vigorous control measures have been instituted through the co-operation of the United States Public Health Service and the Biological Survey. The eradication of all rodents is not feasible, but if sufficient infected rats can be destroyed a break may be made in the chain of infection.

On the favorable side of the records is the new all-time low number of cases of typhoid fever—thereby continuing the downward trend of recent years. Smallpox also reached the lowest figure on record, unfortunately, however, not due to all the population being vaccinated. Diphtheria was down somewhat, but was still far too prevalent when we consider that there is a

simple means of prevention available. The decrease in tuberculosis cases probably reflects the suspension of the diagnostic clinics more than any real decrease in incidence.

In general, the year 1933 was a favorable one as far as communicable diseases were concerned. No widespread epidemics threatened the population and some progress was made towards the eradication of those diseases which should be a relic of the past.

BUREAU OF VITAL STATISTICS

W. Thurber Fales, D. Sc., Director

ACCURATE REGISTRATION

Complete registration of births and deaths remains one of the most important functions of the State Health Department. Intelligent planning of the work of any health department, either local or state, depends on accurate statistics of births and deaths. The indications are that there will be 4,500 fewer births reported for 1933 than for the previous year. Much of this decrease is, no doubt, the result of fewer marriages during the present depression period. It may also reflect the decrease in medical attendance at the time of birth. The fact remains, however, that the daily experience of the Bureau of Vital Statistics shows that many of the births found unreported had been attended by physicians. There are very few doctors of the State who do not report with a fair degree of regularity. Nevertheless, it is feared that few doctors have so systematized their reporting that it is not possible for them to fail occasionally to make a report.

The minimum requirements of the Federal Census Bureau for continuation in the Registration Area is that the registration shall be at least ninety per cent complete. Unless the physician is extremely careful, he might well be reporting nine out of every ten births and believe that his reporting is excellent. Yet, as a matter of fact, such a physician is just barely meeting the requirements of the Federal Government. We really need registration of 96 per cent or better on the part of physicians to maintain our registration. There is one way by which this could be secured, namely, that the physician report every birth immediately upon his return to his office, and in

no case later than ten days after the birth takes place.

In order to speed up the transcribing of our records of births and deaths for sending to the Federal Census Bureau, it is expected that during 1934 photostat copies will be used. This means that it is essential that every record be made out legibly and correctly. We have always been proud of our records in Alabama and we feel sure that with the cooperation of the doctors of the State these photostat copies will reflect the care and accuracy with which these reports are made. If this procedure is carried out, it is also expected that sometime during the year the notifications of birth registration sent to mothers will be in the form of photostat copies of the original certificate. This will greatly enhance the accuracy of our records, since any errors will be seen by the mother and corrected. The Bureau of Vital Statistics, therefore, urges all doctors to use extreme care in filling out both birth and death certificates during the present year.

Complete and accurate registration depend on prompt reporting. It is hoped that during 1934 every physician in the State will see that all births attended by him are reported regularly each month.

BUREAU OF SANITATION

G. H. Hazlehurst, Director

CONTROL OF OYSTER SAFETY

Raw oysters have a quality in common with raw milk—they are sometimes vectors of intestinal infections. During the last decade the occurrence of typhoid or other acute intestinal infection traceable to the consumption of raw oysters from polluted sources has been rare or non-existent in this State. This has also been true of milk. Nevertheless, the possibilities of pollution of oyster-growing areas are ever-present; and infected oysters may be eaten raw and cause an outbreak of disease. Therefore, regular observation of oyster-growing areas, and control of the conditions under which oysters are opened and packed constitutes a logical function of the State Health Department.

Oysters are neither salt-water nor fresh-water denizens; they grow naturally and best in brackish waters, protected from extreme effects of winds, tides, and freshets.

Obviously, the most protected areas are land-locked bays, the lee sides of islands, the edges of marshes, and the mouths of sluggish tidal bayous. In this State few of the oyster-growing areas are subject to pollution from the fresh waters of surface streams, although in some cases concrete laboratory evidence points to the fact that protective measures are in order. These areas are being kept under observation by means of the examination of water samples taken directly from the oyster beds at frequent intervals.

Oysters from pollution-free sources may become infected during storage, in the process of opening and washing, in the packing can, or in the retail store or market. Before control measures were instituted, oysters were frequently "floated" or "bedded" in the relatively fresh water of marsh bayous to fatten them before opening. Osmotic pressure causes oysters to increase their liquor content when they are placed in fresh water. The fact that this increased liquor content soon "bled" after packing did not entirely prevent the practice. A most serious feature of the practice, however, was that oysters were usually floated or bedded close to shore habitations, where they could be guarded from theft, and the chances for the "drinking" of fecal polluted waters were therefore greatly enhanced.

In order to reduce the chances for infection during the opening and packing process, all oyster-shucking places, from which oysters are shipped, are under regular inspection to enforce the regulations, which prescribe cleanly methods, sanitary human waste disposal, protected water supply, sterilization of shucking buckets, opening knives, etc., screened counting and packing rooms, etc. Only new cans are used for packing oysters, and these are rinsed with hot water before filling.

When a shucking plant complies with the physical requirements of the regulations, a Shellfish Certificate is issued to the operator, and the certificate number must then appear on every can of oysters shipped therefrom. This season an innovation has been the unification of certificate number stamps. Stamps were purchased by the Department, and are sold to certificate holders at cost. In addition, the stamps bear the numerals of the season for which the

certificate was issued, and must, accordingly be replaced every season. The purpose of this is to prevent the sale of oysters at the beginning of each season by dealers whose plants have not been inspected since the close of the last season.

The U. S. Public Health Service acts as a clearing house for information concerning shellfish certificate holders in other States, and issues lists and supplements at regular intervals. If certificate numbers do not appear on cans of shucked oysters, or on tags attached to barrels or sacks of shell-stock oysters, an inquiry to the State Health Department concerning the status of the shipper will receive prompt attention.

After oysters from certified shuckeries have reached the retailer, their care and protection from contamination are the duties of the County Health Department. They should be kept cold, but the placing of a lump of ice in the container is prohibited, because this dilutes the liquor, and may introduce contamination.

Oysters constitute an excellent food, in both taste and dietary value, because of their iron, phosphorus, and iodine content. Oysters from certified sources are as safe as the practical application of the precepts of sanitation and hygiene, enforceable by inspections at about monthly intervals, can make them.

C. A. A.

CURRENT STATISTICS

*PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA

	Nov.	Dec.	Estimated Expectancy
Typhoid	46	32	70
Typhus	92	59	8
Malaria	395	218	99
Smallpox	1	4	18
Measles	41	337	73
Scarlet fever	213	167	132
Whooping cough	41	137	95
Diphtheria	258	181	232
Influenza	124	258	411
Mumps	9	14	31
Poliomyelitis	3	3	2
Encephalitis	3	6	2
Chickenpox	33	260	142
Tetanus	8	5	5
Tuberculosis	213	254	243
Pellagra	21	32	20
Meningitis	2	1	3
Pneumonia	169	380	407
Syphilis (private cases)	137	178	129
Chancroid (private cases)	3	2	7
Gonorrhea (private cases)	157	156	127
Ophthalmia neonatorum	1	0	2
Trachoma	0	0	1
Tularemia	1	1	0
Undulant fever	0	4	0
Dengue	0	1	1
Amebic dysentery	1	7	0
Leprosy	1	0	0
Rabies—human cases	0	0	0
Positive animal heads	74	73	0

*As reported by physicians and including deaths not reported as cases.

The Estimated Expectancy represents the median incidence of the past nine years.

PROVISIONAL MORTALITY STATISTICS

Alabama November 1933

CAUSES	Number of Deaths Registered Nov. 1933			Annual Rate per 100,000 Population		
	White	Colored	Total	Nov. 1933	Nov. 1932	Nov. 1931
ALL CAUSES	1242	1063	2305	1023.2	960.1	1049.4
Typhoid fever	6	6	12	5.3	4.0	10.4
Smallpox						
Measles	1		1	0.4		0.9
Scarlet fever	3		3	1.3	1.8	1.4
Whooping cough	1	9	10	4.4	5.4	3.6
Diphtheria	18	3	21	9.3	13.0	20.9
Influenza	40	20	60	26.6	45.0	21.3
Pneumonia, all forms	109	71	180	79.9	65.2	91.1
Poliomyelitis						0.4
Tetanus	2	4	6	2.7	0.4	2.3
Tuberculosis, all forms	45	93	138	61.3	71.1	82.5
Tuberculosis, pulmonary	44	92	136	60.4	65.7	73.5
Malaria	16	14	30	13.3	5.8	10.9
Cancer, all forms	83	36	119	52.8	40.9	54.0
Diabetes mellitus	22	9	31	13.8	11.7	10.0
Pellagra	9	14	23	10.2	9.0	15.0
Cerebral hemorrhage, apoplexy	61	60	121	53.7	50.4	56.2
Diseases of heart	182	131	313	138.9	118.8	113.4
Diarrhea and enteritis						
Under 2 years	17	8	25	11.1	8.1	14.0
2 years and over	8	3	11	4.9	3.1	5.9
Nephritis	99	86	185	82.1	75.1	85.7
Puerperal state, total	22	21	43	19.1	13.9	16.3
Puerperal septicemia	7	8	15	6.7	4.5	5.4
Congenital malformations	16	2	18	8.0	10.8	9.1
Congenital debility and other diseases of early infancy	55	42	97	43.1	45.4	54.9
Senility	13	18	31	13.8	24.3	15.0
Suicides	18	1	19	8.4	9.0	6.8
Homicides	9	37	46	20.4	28.8	21.3
Accidental burns	6	9	15	6.7	9.4	5.9
Accidental drownings		2	2	0.9	2.9	2.7
Accidental traumatism by firearms	6	5	11	4.9	7.6	11.3
Mine accidents		2	2	0.9	0.9	0.4
Railroad accidents	4	4	8	3.5	3.1	1.4
Automobile accidents	54	20	74	32.8	22.0	19.0
Other external causes	25	15	40	17.8	17.1	23.1
Other specified causes	224	159	383	170.0	135.0	152.4
Ill-defined and unknown causes	68	159	227	100.8	100.8	109.7

Mental Health—The success or failure of the mental health movement will depend on its presentation to and final acceptance by the public. Public opinion is a forceful weapon; it has overthrown dynasties, created democracies, abolished slavery and franchised women. Conversely, it has brought wars, pestilence and disease (through tolerance of insanitary conditions), and it has piled up abominable laws. Today it pours gold into the pockets of charlatans and quacks, crucifies noblemen and immortalizes Babbies.

In the matter of mental health, while one is prone to criticize the public for erecting monuments and building highways over mountains and vales while yet being content to permit the mentally ill to multiply and to be housed in dark insanitary places, the medical profession must share this criticism. In the past, physicians in general took pride in knowing nothing about mental diseases. Those who are responsible for the training of physicians are responsible not only for this lack of knowledge of psychiatry but also for the failure to provide, through their pupils, adequate leadership for the public at large.—*Report of Committee on Mental Health, A. M. A.*

Book Abstracts and Reviews

Diseases of the Chest and the Principles of Physical Diagnosis: By George William Norris, A. B., M. D., Formerly Professor of Clinical Medicine in the University of Pennsylvania; Chief of Medical Service "A", Pennsylvania Hospital; and Henry R. M. Landis, A. B., M. D., Sc. D., Professor of Clinical Medicine in the University of Pennsylvania; Director of Clinical and Sociological Departments of the Henry Phipps Institute of the University of Pennsylvania. With a chapter on the Transmission of Sounds Through the Chest by Charles M. Montgomery, M. D., Formerly Physician to the Phipps Institute, Philadelphia; and a chapter on the Electrocardiograph in Heart Disease by Edward B. Krumhaar, Ph. D., M. D., Professor of Pathology, University of Pennsylvania, School of Medicine. Fifth Edition, Revised. 997 pages with 478 illustrations. Philadelphia and London: W. B. Saunders Company, 1933. Cloth, \$10.00 net.

There are some who feel that this year will end the depression. Even so it is doubtful that x-rays will soon be available for use by every physician in the State. It is also doubtful that all patients will soon be able to afford x-ray and laboratory assistance in the diagnosis of their disease conditions. Until such a millenium is reached, most of the physicians will still have to rely upon their five senses and their common sense in the diagnosis of the majority of illnesses with which they are confronted. This book on diseases of the chest deals primarily with the methods of diagnosis of respiratory and circulatory diseases without the use of laboratory and mechanical instruments. Nevertheless when the x-ray and laboratory will add valuable data in the diagnosis of a case, these findings are described in detail.

After a section dealing with the theory and practical methods of examination of the lungs and circulatory system, the authors describe in detail the individual diseases of the bronchi, lungs, pleura, diaphragm, pericardium, heart and aorta. In the case of each disease they discuss etiology, pathology, symptomatology and physical signs. Their style is clear and their descriptions lucid. Their experience has been drawn from abundant clinical material and their scientific wisdom is obvious on every page. Of particular interest are the chapters on tuberculosis, influenza and angina pectoris.

A standard text-book since 1907, this fifth edition brings its contents up to date. There have been a few radical changes since the last edition.

C. K. W.

Miscellany

ADVERTISERS' NOTES

What Every Woman Doesn't Know How to Give Cod Liver Oil

What Every Woman Doesn't Know is that psychology is more important than flavoring in persuading children to take cod liver oil. Some mothers fail to realize, so great is their own distaste for cod liver oil, that most babies will not only take the oil if properly given but will actually enjoy it. Proof of this is seen in orphanages and pediatric hospitals where cod liver oil is ad-

ministered as a food in a matter of fact manner, with the result that refusals are rarely encountered.

The mother who wrinkles her nose and "makes a face" of disgust as she measures out cod liver oil is almost certain to set the pattern for similar behavior on the part of her baby.

Most babies can be taught to take the pure oil, as Eliot points out, if the mother looks on it with favor and no unpleasant associations are attached to it. If the mother herself takes some of the oil, the child is further encouraged.

The dose of cod liver oil may be followed by orange juice, but if administered at an early age, usually no vehicle is required. The oil should not be mixed with the milk or the cereal feeding unless allowance is made for the oil which clings to the bottle or the bowl.

Mead's 10 D Cod Liver Oil is made from Mead's Newfoundland Cod Liver Oil. In cases of fat intolerance the former has an advantage since it can be given in 1/3 to 1/2 the usual cod liver oil dosage.

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There is no appreciable amount of vitamin D in common articles of food; but by drinking delicious chocolate flavor Cocomalt every day, a growing child is definitely safeguarded from a vitamin D deficiency.

For vitamin D is present in Cocomalt in the proportion of 30 Steenbock (300 ADM-A) units per ounce—the amount used to make one drink. Mixed with milk according to directions, every cup or glass of Cocomalt a child drinks is equivalent in vitamin D content to two-thirds of a teaspoonful of good cod-liver oil.

Many physicians recommend Cocomalt routinely during pregnancy and lactation, not only because of this rich vitamin D content, but because of the extra proteins, carbohydrates and minerals (calcium and phosphorus) which Cocomalt provides.



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CANCER OF THE LARYNX*

REPORT OF THREE CASES OF LARYNGECTOMY

MURDOCK EQUEN, M. D.
Atlanta

Laryngeal carcinoma is not a common condition. But neither is any other type of malignant disease met with every day. Alvarez, for example, has estimated that the average busy doctor encounters but one cancer of the stomach in three years. On the other hand, cancer of the larynx is far more important than would be suggested by the frequency with which the general practitioner encounters it. This is because, as a rule, malignant conditions of this organ give rise to symptoms at an early stage, and when the diagnosis is made at this period and proper treatment promptly instituted, the outlook for the patient is better than in almost any other type of cancer. Moreover, when one realizes that more persons are said to die of this disease every year than were killed in the A. E. F., it becomes apparent that the importance of cancer of the larynx cannot be overemphasized.

SYMPTOMS

Hoarseness is the most striking symptom of the disease. Chronic hoarseness is usually due, as we were taught in our student days, to tuberculosis, syphilis or cancer. Therefore, when any patient has been hoarse for more than a few weeks it is the duty of any physician whom he may consult to determine its cause.

The specialist in diseases of the ear, nose and throat requires the assistance of other physicians in making a complete diagnosis. Laryngeal tuberculosis is, in all probability, always secondary to tuberculosis of the

lungs. A careful examination of the chest, including x-ray and sputum examinations, will enable one to say that tuberculosis is or is not present. Syphilis may cause hoarseness both through involvement of the larynx itself and through pressure by an aneurysm of the arch of the aorta on the recurrent laryngeal nerve. Physical examination, a Wassermann test and an x-ray of the chest will tell one rather definitely whether or not syphilis is present. At the same time, on several occasions, tuberculosis, syphilis and malignant disease have all three invaded the larynx. It is, therefore, of the most profound importance to make a painstaking examination of the larynx itself.

Though some neoplasms of the cords can be detected merely by the use of a laryngeal mirror, a thorough examination demands direct inspection. This may be done by the means of a laryngoscope or the Lynch suspension apparatus. I prefer the latter. It is impossible to be certain from inspection alone whether a lesion is or is not malignant. It is, therefore, essential to secure a biopsy. Though some may perhaps fear to do a biopsy in certain organs on account of the danger of disseminating metastases, the hyaline box that encloses the larynx is so poor in lymphatics, that there is no danger of spreading the cancer by biopsy if radical operation follows within a short time.

The only hope of cure of cancer of the larynx, as a cancer elsewhere, is to remove the growth completely. There are three principal methods of extirpating cancer of the larynx. The late Dr. Robert C. Lynch, of New Orleans, frequently dissected out the lesion through the natural channels of the mouth and throat, for which he devised his well-known suspension apparatus. In suitable cases, this method seems to me excellent, for, if time should prove that the

*Read at a meeting of the Calhoun County Medical Society, Anniston, with motion pictures illustrating technic of laryngectomy.

growth were not completely removed, little damage has been done since the hyaline barrier remains intact.

Laryngofissure, splitting the thyroid cartilage in its anterior midline and dissecting out the growth from the vocal cord, has been popularized by Chevalier Jackson in this country. He has reported 80 per cent cure in those cases that he considered suitable for this operation. However, he states that only 20 per cent of the cases coming under his observation are suitable for the method.



CASE I

The third accepted method is to resect the entire larynx. Though this is a most radical step, it is surprising how comfortable such patients can be. Fifty years ago the mortality of the operation was extremely high, patients rarely surviving the operation by as much as a year. More recently the operative mortality has been cut down to about 10 per cent in competent hands, and some surgeons have reported thirty cases or more without a death. Five, ten and even twenty-year cures are being reported in ever increasing numbers.

REPORT OF CASES

Case 1. Mr. B., aged 45, became hoarse in 1929. A year later a biopsy done in another state had been pronounced non-malignant. Examination of the larynx in March 1932, revealed a granular mass involving the greater part of the left cord. From tissue removed by me the pathologist pronounced it epidermoid carcinoma, grade 4. On March 21, 1932, I removed the tumor by the laryngofissure method. His larynx was examined at frequent intervals and nine months later there was no evidence of local recurrence and he seemed to be in perfect health. Following this the patient left Atlanta, but after about two months he not only grew hoarse again but began to have difficulty in breathing. Although he was satisfied that the difficulty in breathing was due to "asthma" he feared that the loss of his voice meant a recurrence of the cancer so he returned to me. There was extensive recurrence of the cancer obstructing the lumen of the larynx. On March 20, 1933, I performed total laryngectomy. A few weeks after this operation he was in good condition again and since that time he has been enjoying life.

Two months after the operation he had learned to use his artificial larynx well enough to make himself understood but, more recently, he has had lessons from a voice teacher and now he can be understood easily. At this time his color is excellent and his weight normal.

Comment: Although this case has been reported before, it presents so many important points I have considered it worthy of mention again. It may be that the laryngeal tumor was not malignant at the time of the first biopsy, but I am inclined to think that this biopsy resulted in stepping up the grade of malignancy during the two years that intervened before the laryngofissure. Perhaps the most important point to be emphasized is that, for a laryngofissure, the patient must be kept under constant observation in order to detect the earliest evidence of recurrence of the growth.

Case 2. Dr. V. J., aged 55, was a busy country practitioner who had been hoarse off and on over a period of three years. The hoarseness, which had grown steadily worse for several months, he thought was due to a chronic laryngitis, the result of too much exposure. He began to grow short of

breath, but the dyspnea he considered evidence of a failing heart. He consulted me on September 7, 1933. Mirror examination showed that the laryngeal box was filled with a fungating neoplasm. In order to prevent suffocation, I determined on immediate total laryngectomy. The pathologist classified the operative specimen as epidermoid carcinoma, grade 2. Dr. J. has since been able to resume his practice.

the larynx by attending physicians was necessary to prevent suffocation. Two days later I removed the entire larynx. This cancer was classified as epidermoid carcinoma, grade 2. Since that time she has gotten along fine.

Comment: This case is mentioned primarily to illustrate that women do have carcinoma of the larynx. It is a coincidence that two cases so advanced as to cause se-



CASE II

Comment: This case illustrates that it is not wise to attempt to be one's own physician. Perhaps two years ago laryngofissure might have relieved this patient with less inconvenience to him. In view of the low grade of malignancy, I hope that he is cured.

Case 3. Mrs. J. M., aged 60, had been noticeably hoarse for a year, growing rapidly worse for two months. Difficulty in breathing had been rapidly increasing so that on November 21, 1933 intubation of



CASE III (Artificial Larynx in use)

vere obstruction to breathing without evidence of distant metastases, both of grade 2 malignancy, should have come under my observation in such a short period of time.

TECHNIC

As has been indicated, a biopsy is important to determine how radical an operation is necessary. This should be followed in a few days by the necessary operation. On the other hand, when the neoplasm has been allowed to progress so far that it produces

obstruction to the breathing, there is no alternative but to remove the entire larynx.

The patient is given preliminary doses of sodium amytal, morphine and scopolamine. Anesthesia is best given in the form of avertin by rectum, supported by ether at the time the larynx is severed from the trachea. It is essential for the patient to have scrupulous postoperative care. He is fed through a nasal catheter and must receive an abundant supply of fluids. Suction of secretions from the tracheobronchial tree through a soft rubber tube at frequent intervals is of most profound importance in order to prevent an aspiration pneumonia. Once the wound is thoroughly healed, the patient begins to talk by means of an artificial larynx. The advice and encouragement of another patient already using this apparatus enables a laryngectomized person to learn to make himself understood more rapidly, and I have found the services of a professional voice teacher most valuable in teaching the patient to make some of the more difficult sounds, such as "damn".

SUMMARY

Chronic hoarseness is always suggestive of cancer of the larynx. Its causes should always be determined. If the suspicion of carcinoma is verified, an attempt should be made promptly to remove the neoplasm in its entirety. In early cases of low grade malignancy this may be attempted by means of relatively minor operations, provided always that the patient is kept under constant observation. In more advanced cases, in those of high grade malignancy and in those in which the simpler procedures have failed, it is necessary to remove the whole larynx. The operative mortality of laryngectomy in experienced hands does not exceed 10 per cent, and it is the only means of saving the patient from a lingering and most painful death. Though the inconveniences and esthetic effects of laryngectomy are considerable, the operation does not prevent the patient from leading a healthy, active, happy life.

Fractures of Facial Bones—Pressure of fragments on nerves, such as the supra-orbital or infra-orbital, gives rise to parasthesia or anesthesia in the distribution of the affected nerve. These disagreeable sequelae may persist for many months after pressure on the nerve has been relieved by reduction of the depressed fragment.—*Gill, South. M. J. March '34.*

TREATMENT OF SO-CALLED INTESTINAL INTOXICATION OF INFANTS

A COMPREHENSIVE PLAN

AMOS C. GIPSON, M. D.

Gadsden, Alabama

Intestinal intoxication, while perhaps less frequent now than formerly, is still not an uncommon condition, and one greatly feared because of incomplete knowledge in regard to pathogenesis and inadequate measures of treatment. The clinical picture is well known, and is in many respects similar to that reported in inanition fever of the new-born, Asiatic cholera, severe burns, high intestinal obstruction, traumatic shock, and certain cases of influenza. The basis for correspondence in symptoms is probably to be found in increased blood concentration, a condition common to all of these otherwise unrelated maladies. Since morbid states such as these, wholly diverse in etiology, may present a similar clinical picture, physicians ought to recognize the probability that intestinal intoxication, so-called, is but a symptom-complex dependent largely on abnormal concentration of the blood, a condition which may be precipitated in babies in a variety of ways and under diverse circumstances.

In the treatment of intoxication, it seems that if all measures of proved worth were assembled and coordinated for concerted use at the outset of the treatment, each unit supporting and reinforcing others, results ought to be better than with isolated procedures more or less unsystematically carried out. Such an organization into a comprehensive plan of treatment of therapeutic measures, no one of which is original with me, has been attempted. The results have been so favorable that I have ceased to dread cases of intoxication as I did formerly, when a more or less haphazard, symptomatic treatment was employed.

I believe the essential points in the treatment of intestinal intoxication center about four major procedures, namely, the administration of fluids, the transfusion of blood, the withholding of food for a period of time, and the administration of food at the end of the period of starvation in gradually increasing amounts.

THE ADMINISTRATION OF FLUIDS

There is no doubt that dehydration plays a most important, if not primary role, in the production of the toxic symptoms often associated with the severe diarrheas of infants. Depletion of the body fluids and the consequent increase in the concentration of the blood bring about many derangements in metabolism and vital functions. It is natural, therefore, that first consideration in treatment should be given to measures which will remedy this condition. The fluid intake should be increased by giving physiologic salt solution parenterally, citrated blood intravenously, and water orally. I have availed myself of most of the methods of administering fluids—by mouth, nasal drip, hypodermoclysis and intraperitoneal injections; it is rarely possible to give fluid successfully to these patients by rectum. My first procedure usually is to give the patient an injection of Ringer's solution, subcutaneously or intraperitoneally. The use of this method for the first administration seems preferable to intravenous injection, even in very severe cases, because a larger quantity of fluid can be given intraperitoneally or subcutaneously than intravenously and there is more gradual restoration of blood volume. If the patient is moribund, it is perhaps desirable to give 50 or 75 cc. of isotonic glucose solution, intravenously first, and then, if the infant rallies, Ringer's solution intraperitoneally. The amount of fluid given intraperitoneally is determined by the capacity of the abdominal cavity to receive the fluid without distention; from 150 to 500 cc. may be given in this way at one time. Usually, intraperitoneal injection is followed by hypodermoclysis; the amount of fluid which can be given in this way is usually less than can be given into the peritoneal cavity. If the patient is distended, hypodermoclysis only is used. I have never observed a serious accident resulting from an intraperitoneal injection; it is undoubtedly our most satisfactory method of administering fluids to infants with intoxication. It must be emphasized, however, that this procedure should never be employed when the patient is distended. Most infants with intoxication have scaphoid abdomens, but this is by no means the invariable rule. Needless to say, in injecting fluid into the peritoneal cavity, careful technic must be observed.

After the patient has received fluid parenterally, transfusion is performed. When these treatments have been carried out, the patient is usually so much improved that consideration may be given to the administration of water by mouth. The amount and manner of giving water is determined largely by trial and error. My practice is to begin by giving 10, 20 or 30 cc. of ice cold water at fifteen or thirty minute intervals. If vomiting does not occur, or does occur, water is continued, the quantity increased and the interval lengthened. If the patient is hyperirritable and is disturbed by attempts to administer water, it may be best to give a sedative and discontinue all treatments for 6 to 8 hours; under these circumstances this is the best practice in view of the fact that parenteral saline and blood have already been given. It is desirable, however, to give patients with intoxication just as much water by mouth as possible during the first forty-eight hours. Even when the intake by mouth is great, the parenteral administration of fluid usually has to be employed once or twice a day during this period and, as a rule, cannot be dispensed with entirely, even in the most favorable cases, for several days.

If the patient vomits water in considerable amounts, it may be well to try lavage with a one per cent solution of sodium bicarbonate; then ice water in small amounts at frequent intervals may often be given successfully. As a matter of fact, however, if vomiting has occurred, as it often has in these patients, it usually ceases after fluid has been given parenterally; this result may be expected in most cases even when there has been hematemesis.

I have pushed fluid administration in these cases until no clinical evidences of dehydration exist, or rarely, until slight edema is manifest. One is guided in determining the time for forcing fluids and the extent to which they should be forced by the condition of the skin as regards turgor and elasticity, of the mucous membranes of the mouth and eyes as regards moistness and by the amount of urine. The weight curve is a further guide, for without treatment these infants lose weight rapidly. I am convinced, however, that infants may sometimes show severe constitutional reactions because of dehydration when the objective signs of that condition are exceedingly slight.

On the whole, it may be questioned whether the administration of fluids to infants with dehydration is usually pressed to the optimum point; the error is, I believe, more frequently on the side of stopping short of it rather than overstepping it. One must take note of the extreme instability in water retention shown by some patients with intestinal intoxication. The tissues of such infants are lacking in turgor and elasticity and yet, paradoxically, fluid given to them is not retained. This phenomenon of instability in the water content of the tissues is an ominous sign; patients exhibiting it often do not respond satisfactorily to treatment and many of them die. Transfusion often greatly increases the ability of the tissues to retain water, but, so long as these are dehydrated, I cannot see where it is harmful; on the contrary, it is temporarily helpful to give large quantities of fluid even though little is retained.

Bakwin, Morris and Southworth state that in dehydration the effect of physiologic sodium chloride given subcutaneously or intraperitoneally on "the temperature and blood concentration was neither so marked nor so regular as after water by mouth". It is not possible, however, in most cases of intoxication to give fluid orally in adequate amounts, even if vomiting is not present; it is necessary that large quantities of fluids be supplied quickly. Fluids given parenterally meet these requirements, and with advantage to the patient, if one may judge from the improvement which greatly dehydrated infants make after such treatment. Ringer's solution or physiologic sodium chloride may be eliminated fairly quickly from the body, but an adequate amount is certainly retained for a sufficient time to benefit the organism. During this period of improvement a transfusion is done and the administration of water by mouth is begun; the favorable course initiated by the sodium chloride is thus usually maintained and continued. Repetitions of injections of parenteral fluid are not attended by the dramatically favorable response which usually follows the initial two or three treatments.

In some patients, after the introduction of fluid intraperitoneally and subcutaneously, intravenous injections of a 10, 15 or sometimes 20 per cent glucose solution has been given. These solutions are hypertonic

and were used only after subcutaneous or intraperitoneal fluid had been administered. Usually, from 15 to 25 cc. of glucose solution per kilogram of body weight were given intravenously in a period of about ten or fifteen minutes.

The theoretic value of a glucose solution to patients with intoxication may be summarized as follows: If properly prepared it is nontoxic; it increases the fluid content of the blood; it supplies energy and spares protein; it may be of value in combating acidosis, and, if given in hypertonic solution, it has been said to bring about the rapid absorption of parenterally administered fluid (that is, there is an internal transfusion of fluids from the tissues into the blood) and to promote diuresis. I believe, however, that there is no special indication for the use of a glucose solution in this malady save that of energy supply; its usefulness in other respects is adequately met by other procedures as described in this paper. If it is desired to give glucose because of its food value, the sugar can be given by mouth in a 2 to 5 per cent solution, subcutaneously in a 5 per cent solution or intravenously in a 5 to 10 per cent solution.

It should be stated, however, that if glucose solutions are of demonstrated value in the treatment of alimentary intoxication, they should be employed whether or not their use is theoretically indicated. I am still open-minded on the subject; it may be that the beneficial effects of transfusions are so great that they overshadow the lesser special good which may be derived from the parenteral injection of glucose solutions.

In my opinion, the distention which follows the administration of a glucose solution into the peritoneal cavity prohibits, except in rare instances, its use in that manner.

By mouth, as already stated, I give water; I have tried Ringer's solution and a 2 to 5 per cent glucose both in water and in Ringer's solution. I have been unable to observe, as yet, any advantage in any solution over water.

TRANSFUSIONS OF BLOOD

After the administration of fluids, patients with intestinal intoxication often show astonishing improvement within a period of less than two hours. This improvement is often temporary and misleading.

It seldom persists in severe cases, even when adequate fluid intake is maintained. It is for this reason that the administration of fluid should be reinforced by a blood transfusion in practically all cases, regardless of an apparent initial improvement. I have the impression that it is best to give parenteral fluids first and wait at least one hour thereafter before giving blood intravenously. There seems to be less shock to the patient when this procedure is followed than when transfusion is performed at once. The amount of blood which may be given to infants with intoxication, with beneficial results, is amazing. My transfusions have varied in amounts from 10 to 30 cc. per pound of body weight; few children receive less than a total of 75 cc. of blood and few more than 200 cc. The amount of blood given is proportional to the malnutrition and the degree of dehydration; that is, the more marked these are the greater the quantity of blood given per pound of body weight.

I have used the citrate method of transfusion entirely. Regardless of the age of the child, the blood is cross-matched before giving. I have not seen severe reactions follow transfusions in these cases. It has been my experience that babies in general and those with intoxication in particular stand transfusions extraordinarily well. I have found that exceptions to this rule are most likely to occur in infants who have severe secondary anemia and infection.

I repeat transfusions of blood every 24 hours during the course of the first few days if the patient does not seem to be making satisfactory improvement, or does not maintain continuous progress. I have rarely performed transfusions more than 3 times on any patient with intoxication. As already stated I have found that the first transfusion can be, and to achieve maximum effectiveness must be, large, but, if blood is given subsequently, the amounts should usually be less with succeeding transfusions, that is, totals of from 75 to 150 cc. depending on the size of the patient. Experience has taught the necessity of being cautious, because some patients do not react well to large transfusions repeated within a few days of each other. Less benefit is expected from repetition of transfusions in the treatment of intestinal intoxication than from the first transfusion.

It is impossible to state with exactness in just what manner transfusion helps these patients; both quantitative and qualitative changes in the blood are quickly brought about so that improvement in function of the circulatory, renal and respiratory systems—and thus of the cells throughout the organism—is made possible. Marriott applied the methods of investigation developed in the study of surgical shock to intestinal intoxication and found that in many respects the pathologic physiology in the two conditions is the same. Experience in the late war gave abundant proof that in shock the administration of fluids aids in the restoration of blood volume and normal circulatory function, but that in severe cases a transfusion of blood is by far the most effective form of treatment. Similarly, although I do not attribute the good results of my plan of treatment of intestinal intoxication to any single measure, but to the combination of measures, I do feel strongly that blood transfusion is a most powerful, if not *the most powerful*, weapon at our disposal in the treatment of this condition. I believe that the great importance of transfusion in the treatment of intestinal intoxication is not generally appreciated, and that I am on very safe ground in advocating the widespread use of this important therapeutic measure. It is difficult to say whether or not any patient ill with intoxication will not suddenly, without warning, collapse and die. Also, the brilliant effects of the parenteral administration of fluids may give a false feeling of security. Even on patients on whom transfusions have been performed, unexpected collapse and death may occasionally occur. Unmistakable indications for a transfusion may come too late for that treatment to be any longer effective. Having knowledge of these facts, therefore, I have felt that it is better to err in subjecting the patient to unnecessary transfusions rather than withhold a treatment which subsequent developments may show might have been a life-saving measure. I believe that my general good results in the treatment of this malady are due to the fact that I have found out that I cannot discriminate correctly, and foretell which patients are safe without transfusion.

I have seldom used the intraperitoneal injection of blood in patients with intoxication, because I believe that intravenous

treatment is the therapy of election when there is marked concentration of the blood. Indeed, though my experience has been inadequate, I have obtained the impression that the intraperitoneal injection of blood in cases of this kind may be harmful rather than helpful. In a few of my cases, when venipuncture could not be done, citrated blood was given intraperitoneally. No beneficial results seemed to follow and, indeed, the general condition of these infants did not seem so satisfactory as before treatment. Furthermore, distention developed and persisted for several hours, so that Ringer's solution could not be given into the peritoneal cavity or satisfactorily into the subcutaneous tissues of the abdominal wall. Possibly the circulatory function is so greatly depressed in these patients that blood in the peritoneal cavity cannot be absorbed at a rate or in an amount which makes the blood of any value in restoring blood volume.

WATER DIET

The feeding of patients with intoxication is a subject about which there is more disagreement, perhaps, than arises concerning any other therapeutic procedure. Some physicians feel that infants, at least those who are malnourished, should be fed through the illness. On the other hand, there are followers of Marfan, who has been a consistent advocate of a "water diet". Marfan credits the use of a water diet in the treatment of diarrhea to Luton, who used it in Asiatic cholera. Whatever may be the reasons, it is my opinion also that a period of starvation during the stage of toxemia is desirable in the treatment of intestinal intoxication. The fact that some infants are fed throughout their illness and thrive satisfactorily no more invalidates the use of a starvation period than does the fact that some infants with intoxication recover without transfusion invalidate the use of that treatment.

Starvation may be openly carried out, or may be somewhat camouflaged by the use of tea, a very thin gruel, or a weak (2%) glucose solution. The duration of the period of starvation advocated by those who employ it is a controversial point. Finklestein does not give food for a period of from six to thirty-six hours. Monrad starves his patients until all symptoms which he regards as toxic have disappeared; in some

cases this period lasts as long as twelve days.

It is possible that those of Monrad's patients who could not withstand starvation died within the first three days. On the other hand, many of the deaths from intoxication occur within the first few days, no matter whether the patients are fed or starved. Marfan states, that, if after three days of treatment by a water diet, and the subcutaneous use of salt solution, the patient shows no improvement, the prognosis is absolutely bad. However, Marfan and Monrad did not use transfusion, by means of which patients are frequently carried beyond the dangerous three-day limit laid down by Marfan and recover.

While I believe that theoretically the point at which starvation should be terminated is established by the disappearance of toxic symptoms, in actual practice I have found it inadvisable to adhere strictly to Monrad's precept. There are difficulties to be faced in making emergence from a toxic state the sole criterion for a resumption of feeding; these may be briefly discussed. In the first place, it is impossible to say in many cases just when all toxic symptoms have disappeared. In the second place, another factor, the nutritional state and vigor of the patient must be taken into consideration. If the baby is well nourished and has been vigorous, as can be judged by the condition of his body and by the history, he is able to withstand starvation. He may die, or be so sick as to be close to death, when first seen. But if he dies, it will be as a result of intoxication or infection, not as a result of starvation. Indeed, such a baby, surviving, steadily improves under the influence of starvation and at the end of three or four days on a water diet often appears in so vigorous a condition that one wonders why he ever thought of the possibility that the baby would not withstand starvation. On the other hand, prolonged starvation is to be feared in severely malnourished infants, especially in atrophic babies; that is, in those who have no subcutaneous fat on the face as well as none on the abdomen, trunk and extremities. Such babies have probably lost one-third or more of their body weight, and are in danger of death as a result of destruction of their structural tissues. Starvation is also to be feared if the baby is not

only poorly nourished but is also very young or premature. As a matter of fact, one is often unable to distinguish between signs and symptoms dependent on malnutrition and feebleness and those dependent on the sickness of the baby.

The period of starvation has varied in my patients from twelve hours as a minimum to 120 hours as a maximum; usually, the period is from 12 to 48 hours. In the baby who has a fairly well nourished body, no matter how sick or how close to death he seems to be, I have no fear of starvation for several days and do not begin feeding the patient until, in my judgment, the stage of toxemia has passed. But the majority of cases are in the group of feeble and atrophic babies, and in these I have not waited for complete emergence from toxic symptoms (although this may have taken place), but have given food after periods of starvation averaging from 12 to 48 hours. In behalf of a starvation period, it is only fair to say that malnourished babies seem to withstand starvation much better than would be supposed possible by one who has not practiced this form of therapy. The system used by me to break the fast (that is the method of gradual daily caloric ascent starting at a very low level) provides me a marginal safety zone in treatment—a period when the patient is neither completely starved nor adequately fed. Thus, I hope that if the patient is well nourished, my error, if any, will be on the side of unnecessarily prolonged starvation; if very young and feeble and if malnourished, on the side of too early resumption of feeding. I have no doubt that if we were gifted with foresight, we might, by omitting or shortening the starvation interval and by rapidly increasing the caloric intake, abbreviate the convalescent period. But lacking this foresight, it seems wise to stand by a plan of treatment which affords hope of recovery to the largest number of patients.

THE PROCEDURE IN RESUMPTION OF FEEDING QUANTITY OF FOOD

When feeding is reestablished, it should be done in a very gradual manner, that is, the organism should be required to reassume its former burden by small daily increments. An effort should be made to keep the total daily food intake well below the supposed tolerance of the infant. Usually, the normal caloric requirement of food for

any given baby, who has been the subject of intestinal intoxication, should not be reached before a week or ten days have elapsed after the resumption of feeding. I think this policy should be followed, no matter how well a child may appear to be doing. In practice, I have followed Finklestein's method of increasing in a staircase manner the quantity of food; the food is given in small amounts at frequent intervals. I have found this method far more satisfactory than our former unsystematic manner of varying the food each day according to a new guess at the patient's tolerance, a haphazard method which constantly led to disastrous mistakes of overfeeding; costly retreats were often forced thereby. On the first day, the infant receives from 10 to 20 cal. /kg. (5 to 10 cal. /lb.) of body weight, and each day the caloric intake is increased by from 2 to 8 cal./lb. If the child does very well at the end of three days, the increment may be made larger. In terms of total calories, the child is started out on an intake of about 50 calories daily, and the increase is at first 25 calories daily and later 25 to 50 calories. In terms of volume and interval, on the first day the patient is usually given ten feedings of 10 cc. each, the feedings being given at two-hour intervals. The daily increment at first is from 5 to 10 cc. per feeding; at the end of three or four days, if the child is doing well, the increments are made larger and the interval lengthened.

It should be emphasized that throughout the period of starvation and inadequate food intake, fluid must be administered parenterally and by mouth, according to the condition of the patient with respect to dehydration.

The weight of patients treated in the manner outlined in this paper does not show wide fluctuations. The curve is kept fairly stable at first by the parenterally and orally administered fluid; as the amount of such fluid required diminishes, the amount of food which should be administered increases. In the average case, on about the fifth or sixth day, little, if any, parenteral fluid is required and the caloric intake is about 50 to 60 cal./kg. (25 to 30 cal./lb.) per day. The caloric increments are small. This rule is not invariably followed, but in general is safe. If the child is vigorous and bids fair to make a rapid recovery, one can

advance quickly to the caloric intake required for growth. Even on a basal diet, these patients, particularly those who are fairly well nourished, often make considerable gains in weight for a week or ten days. This is a recovery or reparative period when the weight lost during the illness, due to the inability of the tissues to retain water, is regained. Thus the gain in weight is due largely to retention of water.

I have been led to adopt the conservative course outlined in the foregoing, because of the fact that patients who have had intestinal intoxication are prone to recrudescences, from which recovery is less likely than from the initial attack. Treatment of recrudescences and recurrences are often not satisfactory.

THE KIND OF FOOD

In regard to the kind of food to be given in cases of intestinal intoxication, I am under the impression that the matter has received undue emphasis considering the paucity of facts. There is little agreement among physicians on this subject; what one physician regards as nectar is regarded by others as poison. I have seen various milk mixtures used, namely, breast milk, protein milk, protein milk with sugar, skimmed lactic acid milk, alone and with added carbohydrate, and boiled whole milk diluted with water and with added sugar. I can only say that the character of food has not seemed a matter which plays a leading part in the successful treatment of intestinal intoxication. One cow's milk mixture seems as satisfactory as another, provided that it is cooked, does not contain over 20 to 30% of the total calories in fat and has a concentration of little less than that of breast milk. In protein milk, 55% of the total calories are given in fat, but the fat is apparently well tolerated. I do not believe, however, that protein milk is the most satisfactory food for these patients. I have had more experience with one-half skimmed milk plus 5% carbohydrate soured with lactic acid than with any other food. The food is usually supplanted in a week by a more concentrated mixture, such as boiled whole milk with added sugar; the mixture may or may not be soured. I cannot state that I have observed anything which convinces me beyond doubt that sour milk mixtures have outstanding virtues in the treatment of this condition; I prefer, as a rule, to use

lactic acid mixtures because of the widespread belief in their superiority over sweet milk mixtures in the feeding of most sick infants. Also, because I am aware of no evidence which would indicate that the acidity or other qualities peculiar to sour milk are in any way harmful. I have no definite impression as to the merits of breast milk in this malady other than a feeling that in very young, feeble babies this food should be tried in preference to any other.

It may be that differences in the quality of the food, other than those which I have mentioned, are of great importance in the treatment of intestinal intoxication, but I have failed to perceive what these important differences are. When I have thought that this or that mixture was essential for the particular type of case under discussion, I have usually discovered that I was influenced by prejudice rather than by accurate observation. The fact that so many mixtures are recommended for the same disease is competent testimony that either they are all fundamentally the same, or else, if different, their respective virtues are not in any sense outstanding. It seems to me that there are many patients with intoxication before they are in a condition satisfactorily to utilize it; then the results, whether recoveries or deaths, are ascribed to some particular quality of the diet rather than to the food as food and to other exceedingly important factors.

THE USE OF DRUGS

Acidosis of severe degree is present in a considerable number of patients with intestinal intoxication. Whatever be the nature of the acidosis, it is likely that its development is dependent in large measure on increased blood concentration and the attendant blood, circulatory, respiratory and renal disturbances. It has been my experience, together with many others, that the intravenous administration of a solution of sodium carbonate causes the symptoms of acidosis to disappear, at least temporarily, but the patient does not improve. On the other hand, if treatment is focused on a restoration of the blood volume, not only do the symptoms of acidosis disappear (although more slowly than with intravenous carbonate) but in most instances the patient shows other evidences of improvement. I do not, therefore, use intravenous injec-

tions of sodium carbonate. I believe, however, that it is often advisable to give, at the onset, to those patients who clinically or by laboratory tests show unmistakable evidences of severe acidosis, one or two doses of soda of 45 to 90 grains each in 60 to 90 cc. of ice cold water. The soda is given through a stomach tube after gastric lavage. This lavage is not carried out until at least one hour has elapsed after the intraperitoneal or subcutaneous injection of Ringer's solution; if the soda is given earlier, it is almost certainly vomited. The second and third doses of soda may be given at three-hour intervals; I believe it is never wise to give more than two, or at most, three doses. The use of alkalies in the manner indicated is, I believe, beneficial and does not give rise to the danger of alkalosis which may occur with the indiscriminate use of soda.

On occasion, sedatives for the very restless, hyperirritable baby are indicated. Indeed, it seems to me very important that if a patient with intoxication continues awake and restless after the administration of par-enteral fluid and the transfusion of blood, he should be given a sedative and freed from all annoyances for a period of about six hours. Morphine sulphate hypodermically is probably the best sedative to use.

It seems reasonable that benefit might be had from catharsis for certain patients who are seen at or near the onset of their sickness, and presumably have a considerable food residue in their gastro-intestinal tract. This food residue is doubtless the source of, or culture medium of, the production of toxic products, or acts as an irritating foreign body on an alimentary tract which is losing or has lost its ability to function effectively. Aid in removal of this "foreign body" at the opportune moment might conceivably shorten the course of the illness. There seems to be no justification in theory or practice for the use of cathartics after the watery diarrhea has set in.

I have observed no benefit from the administration of camphorated tincture of opium with the idea of lessening the number of stools. The sedative value of the drug may, of course, be of value in certain cases.

TREATMENT WHEN PATIENTS ARE REFRACTORY OR HAVE RECURRENCES

There are, of course, patients with intestinal intoxication who do not respond to the

treatment advocated in his paper; there are others who, when they are apparently convalescing satisfactorily, have recurrences of the toxic symptoms. Such misfortunes are most likely to occur in patients who have an infection and in those who are markedly malnourished. Any patient, also, whose caloric intake during convalescence has been, apparently, too vigorously pressed, is prone to have his toxic symptoms return. As already pointed out, recurrences are more difficult to treat successfully than the initial illness. With each "break" the ability to come back seems to diminish.

In treating the infant who does not respond, or in whom symptoms of intoxication recur, it is very difficult to know what to do and impossible to lay down rules of thumb. The best mode of procedure is by no means clear in my own mind. So far as I know, one should adhere as closely as is permitted to the principles discussed in this paper, but should be prepared to make such modifications of the various procedures as the special symptoms and reactions of the individual patient seem to demand. Without doubt, fluids must be adequately supplied and transfusions judiciously used. The latter may be given two or three times a week. Such measures, according to our present knowledge, must be regarded as constituting "supporting" treatment, calculated to enable the patient to "carry on" until in time the necessary adjustments of a metabolic, immunologic or other nature are made. No therapeutic or dietary measure with which I am familiar approximates in value the transfusion of blood to these patients.

I cannot speak with such definiteness, however, in regard to the feeding of the infants in this special group. Torn between a desire to withhold food because of toxic symptoms and a compelling belief that food must be given because of the severity of the malnutrition and the feebleness of the child, I am sure that to a large extent, one simply "muddles along". But one must adopt some policy and, probably in most instances, we do not pursue quite a middle course but incline to run the risk of overfeeding rather than underfeeding, relying on giving concentrated food in small amounts at frequent intervals. The period of water diet may be repeated, as seems indicated, once or

possibly in rare instances, twice, but the duration is never long, from eight to twenty hours. The caloric intake after the period of starvation is usually advanced rapidly, sometimes abruptly, to the basal requirement or above it. If all seems to go well, an increase in the caloric intake may be made every second or third day; but it is usually only after these patients are well along the road to convalescence that I consider giving the large amount of food required to meet their total requirements. As a matter of fact, these infants have very poor appetites, as a rule, and at this stage are usually receiving about all the food we can get them to take.

The infection from which an infant with intestinal intoxication is suffering may, of course, be amenable to special treatment; e. g., otitis media, mastoiditis, furunculosis. Surgical measures are certainly to be employed in many cases. But usually, perhaps, the infection is dealt with most successfully just as is the intoxication, that is, by keeping the fluid intake adequate and by transfusions of blood. The possible presence of antibodies in the donor's blood must be recognized as important in this connection. Marriott and Floyd have recently emphasized the role of streptococcus infections of the mastoids in certain infants with intestinal intoxication.

They believe that simple drainage offers hope of cure in these patients. It may be pointed out that a streptococcus infection of the mastoids can probably be related etiologically to only a limited number of these cases. An infection with the streptococcus would not seem to account for the fact that intestinal intoxication is most frequently seen in hot weather, that it takes place in infants in whom no evidence of any infection of the upper respiratory tract is found, and that it may occur with a variety of infections, not all of which are due to the streptococcus. Since the most common serious infections to which infants are susceptible are those of the upper respiratory tract and of the middle ear, and since the streptococcus is perhaps the most frequent infecting bacterium when these infections are severe (and is sometimes demonstrable in the blood stream as well as locally), it naturally follows that a large number of infants develop intoxication when suffering from infection with this particular organ-

ism. I have seen intoxication in infants with bronchopneumonia, pyuria, dysentery and furunculosis; also, typical cholera infantum in measles and in staphylococcus as well as as in streptococcus septicemia.

EFFECTIVENESS OF TREATMENT

It is my impression that the mortality from intestinal intoxication treated as formerly, by enteral and parenteral fluid, intravenous injections of carbonate of sodium solution and milk mixtures, supposed to be more or less specific for diarrhea, is about 80 or 90%. Holt and Howland state that "True cholera infantum is nearly always fatal". According to Morse and Talbot, "it is very seldom that a baby recovers from this disease. Death usually takes place during the first 48 hours after the onset". Similar statements are found in other textbooks. I believe that with the plan of procedure here advocated a majority of infants with intoxication recover.

At Yale University where this plan of treatment is used the mortality rate was reduced from 70 to 33% for those patients treated in fair accord with the principles advocated in this paper.

SUMMARY AND CONCLUSIONS

A comprehensive plan of treatment for routine use in cases of intestinal intoxication has been outlined and discussed. It is not my desire to give the impression that the treatment advocated is the only one which may be employed in intoxication. But, from experience obtained from various clinics where I have studied, I have come to believe that the procedures outlined constitute in principle the treatment which will be attended most frequently with success. And, while success, in my opinion, is made possible by the adherence to the principles on which the treatment is based, I do not advocate a rigid, narrow attitude in applying them in the case of the individual baby. All patients with intestinal intoxication are seriously ill, and I treat them from the outset on the basis of this fact. Distinctions in regard to clinical types are not made. I believe that the wise and safe course to follow in treating infants with intoxication is to remove from our minds the conception of correcting specific metabolic disturbances by specific

treatment and to go forward with singleness of purpose to give each patient from the outset the benefit of all therapeutic measures whose effect is to help restore normal function to the cells of the whole organism. This course should be followed, regardless of any evidence from the laboratory as to the normal nature of certain metabolic processes and the disturbed condition of others.

The successive steps in carrying out the plan of treatment advocated conform ideally to the following schedule:

1. Ringer's solution is given intraperitoneally or subcutaneously, or, usually in both ways. As quickly as possible, blood is taken from the baby and from relatives or friends in order that they may be cross-matched.

2. A blood transfusion by the citrate method is done; the amount of blood given varies from 10 to 30 cc. per pound of body weight; transfusions seldom total less than 100 cc. or more than 200 cc.

3. If the patient has acidosis, the stomach is lavaged, and from 45 to 90 grains of bicarbonate of soda dissolved in 40 to 60 cc. of ice cold water are left in the stomach. This treatment may be repeated once or possibly twice, according to indications, at three-hour intervals.

4. Water is given by mouth, either in fixed amounts at definite intervals or continuously by the drip method through a nasal catheter.

5. Ringer's solution is administered parenterally as often as there is indication.

6. Transfusion may be repeated once or twice at 24-hour intervals if the child does not improve.

7. The patient is given no food by mouth until toxic symptoms have disappeared or greatly diminished. When food is given, the amount is very small and the interval is two hours; the caloric value is raised daily by definite small increments. On the first day a total of about 50 calories is given, on the second 75, on the third 100, etc. If all goes well, the increments may then be made larger and the total caloric requirement attained in a week or ten days.

8. Modification of the procedures as regards feeding is often made when the patient is an atrophic baby with severe infection.

BIBLIOGRAPHY

Bakwin, H., and Goss, C.: Dehydration fever in new-borns, *Am. J. Dis. Child.* 24: 497 and 508, Dec. '22.

Underhill, F. B., and others: Blood concentration changes in extensive superficial burns, and their significance for systemic treatment, *Arch. Int. Med.* 32:31-49, July '23.

Whipple, G. H., and Cooke, J. V.: Proteose intoxications and injury of body protein, 1. Metabolism of fasting dogs following proteose injections, *J. Exper. Med.* 25; 461, March '17. II (with T. Stearns) The metabolism of dogs with duodenal obstruction and isolated loops of intestine, *ibid.*, p. 479.

Dale, et al.: Traumatic toxæmia as a factor in shock, Medical Research Committee, Special Report Series No. 26, London, His Majesty's Stationery Office, '19.

Keith, N. M.: Blood volume changes in wound shock and primary hemorrhage, Medical Research Committee, Special Report Series No. 27, London, His Majesty's Stationery Office, '19.

Underhill, F. P.: The physiology and experimental treatment of poisoning with lethal gases, *Arch. Int. Med.* 23:753, June '19.

Underhill, F. P., and Ringer, M: Blood concentration changes in influenza, with suggestions for treatment, *J. A. M. A.* 75: 1531, Dec. 4, '20.

Keith, N. M.: Experimental dehydration; changes in blood composition and body temperature, *Am. J. Physiol.* 68: 80-96, March '24.

THE DRIFTING SANDS OF MEDICAL PRACTICE

ADDRESS TO A LUNCHEON CLUB OF LAYMEN

By
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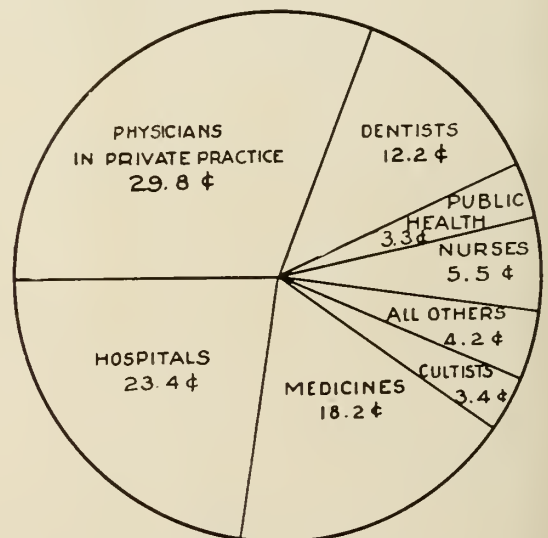
I want to speak of the Drifting Sands of Medical Practice. Today, all social relationships are in process of readjustment, and especially is this true of that happy relationship which has existed for so many generations between doctor and patient. The great advances in the medical sciences and the increasing multiplicity of technical procedures have brought about a sharpening of the lines of endeavor, and this has favored the development of specialism. No one today can acquire, in the space of a brief lifetime, expert knowledge in all of the divergent fields of medicine. If he would be expert, then he must limit his interests and the area of his activities. The necessity thus forced upon a few patients (and the desire of many more) to consult several specialists during a single illness, together with the demand for more elaborate hospital service and better nursing, has added

enormously to the cost of sickness. To families of moderate means sickness not infrequently comes as a great economic catastrophe, and many are unable to secure adequate medical care. Those in the lower income brackets suffer most, and it was primarily to help these that the now famous Committee on the Costs of Medical Care was formed. After several years of extensive investigation this body about two years ago offered its final report. Time will not permit a discussion of the many interesting features of the study undertaken by this Committee and I must content myself by telling you of its conclusions.

I think it not inappropriate to state first that this Committee found that during the year of our greatest prosperity (1929) the average net yearly income of about one-third of the practitioners in the United States was less than \$2,500.00, and they concluded that "no solution of the problem of medical costs can be reached through a reduction in the average of professional incomes." Some other solution must be found.

As a result of this five-year study two reports were issued: a majority report signed by a few physicians and the students of sociology of the Committee, and a minority report signed largely by physicians. The majority proposed, among other measures, the establishment the country over of large group clinics centered around hospitals, the cost of this to be defrayed by taxation, by insurance, or by both. They evidently had in mind something akin to the panel system in England, wherein the person of small means, without cost to himself, may within limits have the physician of his choice, the government, through taxation, paying for this service. This is true socialism in medicine. Opposed to this was the minority. In their report they called attention to the many abuses and the unsatisfactory nature of the English panel system, to the iniquities of increased taxation, to the great reluctance of all physicians to give up their independence and become mere minor officials in a bureaucratic scheme of medicine, to the loss of initiative which would invariably follow, and to the fact that more than 80 per cent of sickness can be cared for by the well-rounded general practitioner without the aid of the specialist. Their first recommendation was

that united attempts be made to restore the general practitioner to the central place he formerly occupied in medical practice. The minority also called attention to the fact that in most plans for insurance against sickness that have been developed on a large scale, about sixty per cent of the money goes for administration and like purposes, while only about forty per cent goes to the physician who does the work, a state of affairs which makes for inefficiency and poor medical service. They recommended that families of small means adopt the budget system; they believed that only in this way could mutually satisfactory medical service be provided.

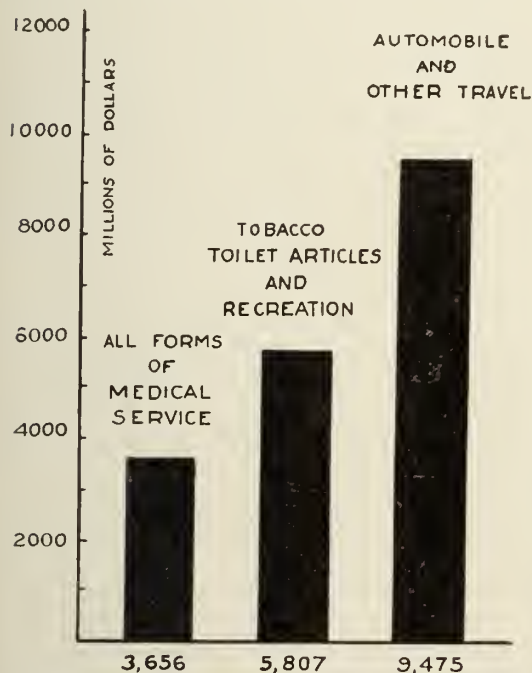


How the American Medical Dollar Is Spent (from "Medical Care for the American People").

These two reports have occasioned widespread discussion. It is generally felt that, while the Committee on the Costs of Medical Care performed excellent service as a fact-finding commission, it did not provide a final solution to this problem. The sands of medical practice are surely shifting. Just what shape and how much permanence of form they will eventually take no one today can say.

Of no small influence in determining the drift of the sands is that great organization numbering almost 100,000 physicians, the American Medical Association. This body holds meetings for scientific discussion and publishes a weekly journal, the best in the world, but it does far more than that. From its ample income it supports several bureaus of scientific investigation and oth-

er enterprises which work not only in the interest of the medical profession but also for the good of the American people. May I tell you of two of its outstanding committees, the Council on Medical Education and the Committee on Foods?



A Comparison of Expenditures by the American People (from "Medical Care for the American People").

Thirty-three years ago, just after the Boer war, a medical officer of the British Army told me this: The Medical Corps of the British Army in South Africa was ordered to accept without scrutiny the graduates of any European medical school, but not those of American schools; these last must be examined. This humiliated me greatly, for I knew why this order was issued. At that time, in 1900, while we had many of the best medical schools in the world we also had the poorest; in fact, we were distinguished by having a great many of the poorest. These schools graduated many excellent men, men who because of great native ability were destined later to become leaders in their profession, but the instruction offered was lacking in many essentials and on the whole was poor. Today, all of this is changed. Any physician who has graduated in the past 10 years from a recognized American school has had excellent training, the equal of the best.

This has come about through the influence of the Council on Medical Education, of the American Medical Association. This Council began about 25 years ago to inspect medical schools and to rate them as Class A, B or C. The schools were graded upon many things—upon the number of full-time teachers, the character of the curriculum, the adequacy of hospital facilities, the equipment of the laboratories, the library, the physical plant and many other items. Most important among these were the entrance requirements and the fidelity with which these were upheld. I can remember the time when a man of the most elementary education, or none at all, if he were ambitious and had saved a little money, could without further preparation enter immediately upon the study of medicine. Now, every American school, preliminary to acceptance, demands as a minimal educational requirement two years of college work; most of them require a bachelor's degree.

You will wonder how a body of this kind, without legal authority, could enforce its rulings. The Council's influence first became effective when the several state legislatures recognized its classification and decreed that their examining boards would license for the practice of medicine only graduates of Class A schools. Those schools rated as B and C were then forced to improve their standards and facilities in such manner as to merit the "A" rating, or to close their doors. Within about ten years about half of the total number followed the latter course. As a result, with the exception of some two or three schools, which are not recognized by the Council, all American schools are now of the highest grade. Were I to meet that European medical officer again today I could truthfully say that in America we have no poor medical schools, that our least efficient is the equal of their best, and that our best are unequaled in the world.

Finally, I should like to tell you something of the work of another agency of the American Medical Association, the Committee on Foods. The American people are acutely health-conscious. Witness the great success of the "Halitosis", "B. O.", and "Pink Tooth Brush" advertisements. This is particularly true in the case of food; people will eat anything which they are told will improve one's health. The adroit copy

writer has learned to make use of this weakness, and oftentimes can juggle half-truths and established facts about in such manner as to give grossly misleading information. To correct this and to promote truthfulness in advertising, is the object of the Committee on Foods.

Manufacturers of foods apply to this Committee for their seal of acceptance which is given only after careful investigation not only of the article itself but also of the character of the label and the claims made in the advertising matter. It is gratifying to note that in many instances the manufacturer has with the most cooperative spirit met the criticisms of the Committee and changed his labels and advertising material in accordance with its advice.

The rules which determine the award of the Committee's seal of acceptance are largely those which should govern all good advertising. The name of the article should be the common name of the food concerned or in the case of a fanciful trade name it should properly identify the ingredients. In addition, the label should conspicuously present such information as will properly inform the public of the true nature and quantity of the food within the package. The public is entitled to this information. For example, a "potato bread" was declined because the amount of potato used in its making was so small that inclusion of the word potato in the name of the product was not permissible; on the other hand, "Butter Crust Bread" was accepted because it has a crust made with the use of butter.

The advertising must be truthful. A "dated" coffee was declined, without reference to the excellence of the product, because we know of no basis for the widely advertised claim that fresh coffee is less toxic than stale coffee.

(Have you heard of the man who had his appendix removed, then his tonsils, and finally all of his teeth, only to discover later that his trouble was that he had been drinking undated coffee?)

A well known grapejuice was refused the seal of acceptance because of the preposterous claim carried in the advertising, such for instance as the assurance that the sugar dextrose of this beverage is not stored as body fat—a grossly misleading statement. The same manufacturer her-

alds the value of the calcium in his grapejuice, but a cupful of this product carries less calcium than a spoonful of milk! Such advertising cannot be endorsed.

Trick claims in food advertising, by means of which a skillful copy writer can juggle true facts about in such manner as to give widely misleading impressions, are not permitted. For example: "XYZ made with hot milk is not only delicious but nourishing. It is rich in the proteins, fats, carbohydrates and minerals children should have." This is a misleading trick claim for the reason that the proteins, carbohydrates and fats to which allusion is made are in fact supplied by the added milk, not by the "XYZ" product.

Testimonials of the medicinal or therapeutic character of food, and misleading vague claims, such as "recommended by physicians and health authorities", are not permitted. The term "health-food" and equivalent claims or statements to the effect that a food gives or assures health are not acceptable, for health depends upon many factors other than those provided by diet; no one food is essential to health, and there are no "health-foods." Likewise, the Committee holds that the term "healthful", so frequently encountered in food advertising, is usually misleading in that it implies that the article so described corrects a possible nutritive deficiency or some abnormal condition in such manner as actively to improve health. The word "wholesome" is permissible, however, since it has a less active significance and implies merely quality or condition.

Vague claims as to mineral or vitamin content are not allowed. If made at all, such claims must state in commonly used measures the exact content of the food in these factors, and unless a vitamin or mineral element is present in sufficient amount to be of appreciable food value it is not entitled to mention in the advertisement. Feeding formulas for infants in lay advertising are not permitted, for it is believed that directions for the feeding of infants are of such fundamental importance that they should come always from the physician. These and many other rules govern the awards made by the Committee.

To date about 1,500 food products have been accepted and 50 declined. It is hoped that the labels and advertising matter car-

rying the seal of acceptance will serve as such excellent examples of good advertising that they will be accorded the approval of the public and that in this way the more flagrant violations of truth in advertising will be stopped.

I trust that I have been able to give you at least a fleeting glimpse of the efforts of a great medical organization so to guide the drift of the sands as to protect the welfare of the American people and the interests of the physician in general practice.

THE ANKLE FRACTURES*

By
ROBERT CAROTHERS, M. D.
Cincinnati, Ohio

The injured man is not the forgotten man. He is quite frequently in evidence and a very interesting citizen. This machine age, with its injurious consequences, functions actively in sending mankind to the poorhouse, or the psychopathic and accident wards of our hospitals.

The injured man's problems become your problems and deserve your consideration. How can we, as surgeons, then, put him again on the job in as good condition as before and in as short a time as is possible? That is the question I beg leave to discuss with you today. There are three points in the treatment of fractures I wish to emphasize, and then demonstrate them with the treatment of fractures of the ankles which are common and, frequently, treated with poor results.

1. The use of local anesthesia in the reduction of simple fractures.
2. The use of non-padded skin casts to maintain reduction.
3. The functional and ambulatory treatment of fractures.

Much of what I shall present was learned while working, five years ago, with Dr. Lorenz Boahler in his clinic in Vienna; and, from experience, what we have added to adapt it to our use and American ideas. I can never repay my Viennese friend for what I gained from him. The highest praise is due him for his benefits to the injured man and the better treatment of fractures.

Local anesthesia is practical in simple fractures; in compound fractures when there is not too much hemorrhage and in comminuted fractures when not too severe. Otherwise, some other form of anesthesia is required.

The technic is simple. A 2% solution of novocaine, a syringe of about 20 cc. capacity, with a long needle, and a bottle of tincture of iodine, with an applicator, constitute the armamentarium. Over the region of the fracture, a small (and it means small) area of the skin is painted with iodine. A few drops are put into the skin for its anesthesia and then the needle is inserted to the fracture, into the hematoma, which is located by withdrawing the plunger slightly; if a few drops of blood enter the barrel, the hematoma is reached and about 20 cc. of the solution are injected into it. In from five to eight minutes anesthesia is produced, lasting one and a half hours or more. Be sure the hematoma, which acts as a diluent to distribute the novocaine, is reached or there will be no anesthesia.

Its simplicity and safety are an advantage and the surgeon is his own anesthetist. In children, it obviates the fear of a general anesthetic; in old people it is more safe; and, in both, it is effective. In the dark room for fluoroscopic use, it relieves one of the care and anxiety of a general anesthetic. The patient can be made a cooperative assistant in the reduction; and should the first attempt fail, there is ample time for others. In many cases the patient can be sent home the same day or the next day, an economic advantage.

It is contraindicated only in those cases learned best from experience in which it is not applicable. If properly given, it does not fail. A sterile solution, syringe, skin and needle touched only by a gloved hand, insure asepsis and no infection. We have had no such experience and are yet to hear of it in others. If used in a compound fracture, avoid the opening; in comminuted fractures inject each fracture, if they are much separated.

In the reduction of a fractured bone, the distal fragment is made to meet the proximal fragment in the same direction by some method of extension and counterextension. Maintenance of reduction is secured by a continuance of extension and counterexten-

*Read to the Association in annual session, Montgomery, April 20, 1933.

sion mechanically; as, for example, a Buck's extension in a fractured thigh; or by some retentive dressing, as a plaster of Paris cast.

A complete and thorough reduction with perfect maintenance is of the greatest importance and should in all cases be secured as nearly as it is possible to do so. This will replace any displaced soft tissue and insure a free circulation through the vessels and lymphatics with good drainage of the bruised tissues. Swelling is thus prevented and fibrosis with stiffness of muscles, tendons and joints will not occur. If a retentive dressing for maintenance is desired, undoubtedly a plaster of Paris cast is the best method and the non-padded skin cast, in our experience, has proved the most satisfactory. The method of application is simple, when learned. No preparation of the skin is required; no antiseptic applications; washing, shaving or oiling is unnecessary. The normal germs have been dormant for years, why awaken them and cause an infection? By incorporating the hair in the cast, it holds better and when removed the hair in the cast breaks from the skin and comes with the cast, causing no pain. Calcium benefits the skin and is not an irritant. Eczematous patches have been known to disappear when the cast is removed. If reduction is complete and thorough, trauma and swelling are no more; and, drainage being effected, trouble from the circular bandage is not to be anticipated. If in doubt the cast can be split and closed again in twenty-four or thirty-six hours; a good rule in one's first cases. The plaster should be applied smoothly without folds or wrinkles.

Non-padded skin casts will hold a fracture as if riveted together or as if in a vise. It will prevent swelling which occurs as the result of movement in a loose padded cast and fibrosis of the soft tissue with its evil consequences. It allows function and ambulation, to be discussed further on.

The ankle fracture occurring with the greatest frequency is one commonly, though sometimes incorrectly, called a Pott's. It is a fracture of the internal malleolus and the fibula an inch or more above the external malleolus. There is a pronation and eversion of the foot presenting an outward dislocation. It is caused by a fixed position of the foot and the body

thrown outward; an extensive strain on the internal malleolus and a cross breaking force on the fibula.

When the first strain fractures the external malleolus and the force continues, there is also a fracture of the internal malleolus with an inward dislocation, supination and inversion. The external ligaments are capable of more stretching, hence these cases are more frequently a sprained ankle. In either case, the ligaments are damaged in proportion to the amount of force in the injury.

Reduction of the Pott's is effected by placing one hand on the external malleolus to exert a strong pressure for extension and the other hand on the internal malleolus for counter pressure. The dislocation and reduction of the other fracture is in the same manner, reversing the method.

For reduction and application of the cast, local anesthesia is produced in the manner described by injecting 10 or 15 cc. of a 2% solution of novocaine into each fracture.

The patient sits on a table, the surgeon on a stool facing him, the injured foot on his knee and the head of the fifth metatarsal the point of contact. In this position the gastrocnemius muscle is relaxed, the foot sufficiently dorso-flexed and slightly pronated. After reduction the swelling can be completely eliminated by a massage and kneading of the soft tissues until the landmarks of the ankle are all seen and the swelling will not recur. An assistant lays off a plaster slab of five thicknesses of a bandage six inches wide; and, in length, the slab is to reach from the posterior portion of the knee, down the calf and under the foot some three inches beyond the toes. It is cut on either side at the heel where it turns and the two pieces are overlapped. This is held by two plaster bandages wrapped around the leg and foot. The plaster is next to the skin. That portion of the slab extending beyond the toes is moulded into an extension sole to give a support to the toes and protection from the bed covers. While the cast is drying, the pressure and counter pressure are continued and the cast smoothed and moulded to fit the foot snugly.

The patient is then put to bed with the foot elevated and the following day he is put on a walking iron which is made of strap iron, one-half inch wide by one-

fourth inch thick. This is fitted to either side of the leg, extending from mid-leg under the foot, three fingers breadth, not unlike a stirrup. This is held by a plaster bandage with a couple of turns on either side through the open part and securely wrapping the leg.

Within the next day or two the patient is made to walk and every day thereafter until the cast is removed. Crutches are used at first, then a cane; and, usually, by the end of the week or less they walk well with neither.

The ambulatory treatment of a fractured ankle is just as important as the reduction and maintenance. There is no danger, as above treated, of misplacing the fragments, swelling or obstructing circulation. Ambulation favors a better circulation, drainage and more rapid repair. The patient is not housed and under some conditions continues his work. He is happier.

After the plaster cast is removed, to prevent swelling and fibrosis which are sure to occur and spoil the good work, an Unna paste dressing is applied and worn continuously for six or eight weeks more. The patient now wears his shoes and a little more vigorous walking is encouraged.

The Cotton fracture, another variety, is a fracture of both malleoli with a fracture of the posterior part of the tibia, a rupture of the anterior ligaments and backward dislocation of the foot. Another fracture, the direct opposite, clips off the anterior part of the tibia and is attended by a forward dislocation. Still another, which is usually severe, separates the bones and ends in an upward dislocation, carrying the astragalus and the piece of tibia with it upwards.

These fractures occur from falls on the foot, planter-flexed in the Cotton fracture and dorso-flexed in the opposite variety. The upward dislocation occurs with the foot square and with extreme force. Fortunately, none occur frequently, more often the os calcis or astragalus is fractured.

Local anesthesia is not effective in these cases. A spinal is more satisfactory. The first two may be reduced by some form of manipulation, but rarely; the last, next to impossible. Reduction is best secured by skeletal traction with the screw traction apparatus. This method permits the application of a cast and maintenance of reduction which is very difficult otherwise. If the

dislocation has been posterior, the foot is put in a dorso-flexed position; if anterior, in a planter. If upwards, a strong pull and the foot slightly dorso-flexed.

A non-padded skin cast is applied in the same manner as before described while the leg is in apparatus. At once, an x-ray check-up is secured; and, if the reduction is satisfactory, the patient is put to bed for six weeks on a Braun's frame with continued weight traction of six or eight pounds. The cast is split the entire length down the front since swelling is unavoidable by reason of the severity of injury and inability to make a perfectly complete reduction. A walking cast with the iron is now applied and worn for six weeks longer at which time an Unna paste dressing is applied and worn for eight weeks. In such severe injuries a support in the shoe, such as is used for a flat foot, had better be put in the shoe and worn for six months or a year.

PELVIC INFLAMMATION IN WOMEN*

By

GILBERT F. DOUGLAS, M. D.
Birmingham, Ala.

In a brief discussion of a subject as broad as the title indicates, the writer is quite conscious of the scope involved, but feels that most of those who specialize in gynecology, as well as internists and general practitioners, need, at times, to be awakened to a keener appreciation of the importance of that large group of diseases, peculiar to women, which result from septic, gonorrheal and tuberculous infections.

In this discussion, inflammatory diseases of the vulva, vagina and cervix must be considered since their foci of infection contribute to diseases of the pelvis proper.

VULVITIS

Infection of Skene's glands or the para-urethral ducts is caused most frequently by the gonococcus of Neisser. Infection here does not clear up as does that on the surface of the urethra but leaves a focus of indefinite duration. Frequently in chronic cases relief is not had until the ducts are opened and cleaned out. Opening may be effected

*Read at a meeting of the Jefferson County Medical Society, Birmingham, December 18, 1933.

ic cases. The gonococci seem to have a selective affinity for the cylindrical epithelium lining the cervical canal, the squamous pavement epithelium of the portio having the same resistance as that of the vagina. The point of transition may be without or within the external cervical os; hence, the occurrence of the infection is influenced by the location of the cylindrical epithelium.

Acute gonorrheal endometritis is to be distinguished from septic endometritis of the streptococcal variety. Gonorrheal infection frequently extends to the tubes while septic endometritis spreads to the parametrium. Fixation and sensitiveness of the cervix always indicate extension of the disease outside the uterus.

The most constant symptom of chronic gonorrheal endometritis and endocervicitis is leukorrhea. Gonorrheal inflammation of the tubes has certain characteristics, one of which is involvement of the tubal mucosa. In contrast, in infection due to streptococci and staphylococci, which reach the tubes either by the blood stream or lymph channels of the broad ligaments, parametritis is a constantly associated lesion and perisalpingitis is the result. This parametrial involvement is absent in pure gonococcic infection. Gonorrheal salpingitis is practically always bilateral but differs in degree of pathology: there may be a mild manifestation on one side; a pyosalpinx on the other.

If there is obstruction because of adhesions to some contiguous organ or the pelvic peritoneum, the closure is seldom complete; intermittent leakage of the infected contents is therefore apt to occur—an explanation of the frequent exacerbations of peritoneal inflammation so common in chronic gonorrheal tubal inflammation. When the tubes become closed and pyosalpinx develops, there is a ptosis or dropping of the tubes into the cul-de-sac.

Generally speaking, the majority of pelvic infections may be grouped under three headings: (a) gonococcal, (b) pyogenic, and (c) tuberculous. Where there has been long encapsulation of the infecting organism, the gonococcus is seldom found, for the organism has been destroyed either by its own toxin or by the colon bacillus.

Women with chronic pelvic infection are more or less disabled physically because of the inflammation in and about the adjacent

structures; menstrual disturbances are common, especially menorrhagia, metrorrhagia and dysmenorrhea. In some cases amenorrhea or scanty menstruation may be noted.

PELVIC INFECTION

Acute puerperal and non-puerperal infections of the female genital organs and their sequelae make up the largest group of diseases peculiar to women.

In general there are two classes of infective bacteria, the cocci and the bacilli; in the former are found gonococci, streptococci, pneumococci, etc. Examples of the latter are *Bacillus coli-communis* and *Bacillus aerogenes-capsulatus*.

All observers agree that the uterine cavity is free from bacteria during normal pregnancy, but during the puerperium infection may ascend into the uterus from the vulva, vagina and cervix,—the habitat of numberless non-pathogenic bacteria which are normal in these locations. It is conceded that, though these are innocuous in the vagina, and around the vulva and anus, they may assume a pathogenic role if introduced into a favorable culture medium beyond the os externum.

Puerperal Infection: These infections may be of a local or general nature, depending on the type and location of the infection. The avenues of entrance are usually through some traumatized or contused tissues, the result of labor, such as laceration of the perineum or cervix, or rupture of the uterus. As a result of such injuries, tissue resistance is lowered and bacterial inoculation and infective invasion are favored. Ordinarily, during the course of normal involution with proper uterine retraction and drainage, the uterus is capable of sterilizing its cavity. For this reason effort should be made to obtain contraction and retraction of the uterus to aid proper involution.

The endometrium, after labor or abortion, should be considered a traumatized wound undergoing normal repair, and subject to infection by pathogenic micro-organisms. In a puerperal endometritis, if the infection is due to the *Streptococcus pyogenes* un-mixed with saprophytes, there is no fetor and the surface of the interior of the uterus is usually smooth and not deeply necrotic. If nature's efforts are not interfered with and the barrier which has been created to protect the organ against the infective

organism is left undisturbed, the patient has a much better chance of recovery than otherwise.

Puerperal fever is due primarily to infection of the obstetric wound by micro-organisms. The cervix in every labor is subjected to trauma and some degree of laceration. From the clinical facts it must be concluded that a well contracted uterus in normal anteversion is capable of emptying itself of its contents if infection is not introduced from the outside.

Any sort of trauma to the delicate granulations which are confining the infection to the uterus promotes invasion and lateral parametritis is a constant sequel. This is particularly true after attempts at digital or instrumental manipulation. It does no harm to remove sterile contents but manipulation always spreads infection when the contents are already infected. With every puerperal endometritis there is an associated metritis,—a defensive reaction on the part of the myometrium against invading cocci.

The most common of the avenues of invasion are through the contusions of the cervix and vaginal vault during and after labor. The cervix and surrounding tissues are subject to the greatest trauma; hence, tissue resistance here is lowest. Furthermore, lacerations at these points open into extensive cellular spaces.

Frequently there is very profuse exudate with these types of infection. As the exudate increases in amount, the blood supply is increased. This is especially true on the venous side. Later, as scar tissue forms and shrinks, the arteries are kinked and varicosities occur in the veins. Moreover ganglia and nerves may become pinched in contracting cicatrices. This explains the pain and the frequency of pelvic varicosities in patients who give a history of infection during the puerperium.

Bacteremia is one of the maladies encountered in puerperal infection and is most frequently streptococcal or staphylococcal in origin. However, pneumococci, *Bacillus pyocyaneus*, gonococci, *Bacillus aerogenes-capsulatus* and anerobic bacilli have been found in blood cultures. For the entrance of bacteria into the blood stream there must be a puerperal wound.

The treatment of puerperal infection is prophylactic and curative. As prophylaxis

is a most important consideration one should ever be on the alert in the matter of sterilization, manipulation and instrumentation. Curative treatment constitutes a broad field. Summarized, it may be said that conservative treatment is far more effective. Glucose intravenously, blood transfusions, and general constitutional measures are to be preferred. Radical operative procedure should not be resorted to. It breaks through the wall of leukocytes and spreads the infection, thus giving bacteria free access to lymph channels and to the various radicles in the uterine wall. The Harris drip, by getting fluids into the rectum, is quite beneficial in the treatment of puerperal infection.

SALPINGITIS

Acute salpingitis is not an operative condition. If properly treated, many cases will clear up entirely but treatment should not be instituted until the acute stage has passed. On the other hand, chronic salpingitis demands operative interference in most instances. Gonorrheal salpingitis is seldom dangerous to life since there is a tendency for the inflammatory reaction to be limited to the true pelvis. Streptococcic salpingitis, however, has a definite mortality.

PERITONITIS

Tuberculous peritonitis should not be lost sight of in making a diagnosis since the fallopian tubes appear to be the most frequent primary seat of tuberculosis in the female peritoneum.

CYSTITIS

Cystitis, also, should be borne in mind in arriving at a diagnosis. The cause of pelvic pain can often be found by examining a catheterized specimen of urine. Frequently cystitis gives rise to more discomfort than do other pelvic disorders. The chronically inflamed bladder is tedious to treat. Patients ought, therefore, to be told that patience will be necessary since treatment may have to be continued for some weeks.

CONCLUSION

Finally, reference should be made to the importance of a rectal examination. Often-times pelvic disease has its origin in a focus of infection within the rectum. When the focus has been removed, symptoms referable to the pelvis disappear. It follows, then, that failure to make a proctologic examination may account for failure of treatment.

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THE 1934 ANNUAL MEETING

Birmingham

April 17-19 brings to the Association its Sixty-Seventh Consecutive Annual Session and a distinguished group of guest speakers. The Jerome Cochran Lecture is to be delivered by Dr. Russell L. Cecil, Professor of Clinical Medicine in the Cornell University Medical College, and well known, through his writings, to the entire profession.

Dr. Morris Fishbein, Editor of the Journal of the American Medical Association, will address the public meeting scheduled for Wednesday evening, April 18.

Others who are to honor the Association by their presence are Dr. J. R. McCord, Professor of Obstetrics and Gynecology, Emory University School of Medicine, Atlanta; and Dr. J. A. Myers, Associate Professor of Medicine, University of Minnesota Medical School.

Preliminary to the session, which is to convene at the Tutwiler Hotel, Birmingham, at 9:00 A. M. on April 17, a preconvention meeting is to be held at Tuscaloosa on the preceding day (Monday), under the auspices of the Tuscaloosa County Medical Society. This added feature will enable the profession to acquaint themselves fur-

ther with the institutions of Alabama's University City, particularly the School of Medicine and Bryce Hospital.

The Jefferson County Medical Society, as host to the general session, extends to the membership of the Association a most hearty welcome to avail itself of the program assembled by President James R. Garber and of the fellowship that will prevail during the days of the meeting.

Elsewhere in this issue of the Journal appears the preliminary program. Perusal of it will reveal subjects of interest to the entire membership, as, for example, the symposia on bronchiectasis, anemias of early infancy, stomach and duodenal ulcer, hematuria, and cancer.

One can hardly afford to deny himself the privileges offered by the three-day session in Birmingham and the preconvention meeting in Tuscaloosa.

CASES OF AMEBIC DYSENTERY

The Bureau of Preventable Diseases of the State Department of Health is greatly desirous of having all cases of amebic dysentery occurring in Alabama reported to it. Cooperation of all physicians is asked to the end that this may be brought to pass.

EDEMA AND DIURETICS

In a recent contribution, Christian¹ says "It is helpful to the clinician to have in mind some simple schema of the common causes or types of edema. The following I have found useful in my own clinical work: Circulatory failure edema . . . , renal edema . . . , nutritional edema . . . , inflammatory edema, anaphylactic edema, obstructional edema . . . , myxedema, endocrinal edema other than myxedema. A schema of this sort brings to mind the chief disturbances that cause edema and helps the clinician to work out the problem of cause in the individual patient. In many patients more than a single cause is operative, and there is considerable overlap in the stated subdivisions in the schema."

The author advises that, in studying the edematous patient, the physician should

1. Christian, Henry A.: Types of Edema and Their Treatment, New England J. of Medicine 209: 1267 (Dec 21) 1933.

first consider the possibility that the edema is the result of cardiac decompensation, since this is by far the type of edema that occurs most frequently. It is in patients of this class that the best diuretic results are obtained. Christian usually treats the edema of cardiac origin with rest and digitalis, which in many cases are sufficient. Whenever a diuretic is needed he uses theobromine sodio-salicylate or theophyllin or, more rarely, a mercurial diuretic, preferably salyrgan. In the other forms of edema the results obtained by diuretics are less certain and frequently prove quite disappointing.

Binger and Keith² studied 216 edematous patients over a period of nine years and have recently reported on the effects of diuretics in the various types of edema in their series. The diuretics most commonly employed were ammonium chloride, ammonium nitrate, calcium chloride, the organic compounds of mercury, mersalyl and merbaphen; and the derivatives of caffeine theobromine. The immediate results of treatment were good and the later effects were beneficial also. "The most constant effect of the therapeutic measures employed in this study was the production of marked diuresis in all types of edema." Unfortunately, the Rochester investigators had toxic reactions to report also: "Untoward reactions, both local and general, were noted in certain cases of all the groups studied." These untoward results included increased renal insufficiency, acidosis, local necrosis, stomatitis, gross hematuria, and diarrhea.

Christian and the Minnesota writers agree that diuresis is best obtained when the edema is of cardiac origin, that mersalyl (salyrgan) is at present the least toxic and most efficacious of the mercurials, and that control of diet and intake of fluid is most important. Binger and Keith say, in conclusion, "The ideal diuretic has yet to be discovered. In the last fifteen years, experimental work and clinical observations have added much to knowledge as to the action and therapeutic results of various types of diuretics. This should give much hope for their continued development in the future." Meanwhile it behooves the practicing physician to prescribe diuretics, not

blindly or indiscriminately, but with intelligence and caution; to strive for the benefits that these agents so often confer, but to be always on guard against toxic results.

W. W.

SPECIALISATION AND SPECIALTIES

The need has long been felt in the realm of medicine for some sort of yardstick by which to gauge the scientific training and clinical capabilities of the individual purporting to possess superior knowledge and skill in a particular field of medicine. To define a specialist, or to state where specialisation begins, is no easy task. The following definition proposed by the Conference of Medical Syndicates of France is both clear-cut and lucid:

"A specialist is a doctor who, renouncing the practice of general medicine, confines his activities either to the diagnosis and treatment of certain diseases, or diagnosis or treatment by certain techniques, or to public health, and who has acquired, in the branch of medical science to which he has devoted himself, a professional reputation and skill based both on his studies and knowledge and on his practice."

Because of the mountainous strides made by scientific medicine and its kindred branches, the intricate techniques to be employed in the modern application of this knowledge to diagnosis and treatment inevitably lead to a division of labour within the groups seeking to administer them. The question now in the foreground of the profession is as to the means to be utilized in the process of standardisation and regulation. It is high time, indeed, that the profession were giving serious concern to the perplexing aspects of this important problem. Specialism is now an essential part of modern practice, is likely to become increasingly more so and consequently must be intimately articulated with the general medical needs of all communities. A marked tendency toward specialisation is quite evident amongst graduates of certain medical schools with Johns Hopkins heading the list with a percentage of 75.1, Harvard 64.1 and the University of Virginia 61.5, while others show only a very small percentage of specialties. A statistical study recently made by Dr. Weiskotten, of Syracuse University, develops the fact that more than

² Binger, Melvin W., and Keith, Norman M.: The Effect of Diuretics in Different Types of Edema. *J. A. M. A.* 101: 2009 (Dec. 23) 1933.

one-third of our medical graduates actually limit their practice to a specialty within six years after graduation and practically three-quarters of them plan on such eventual limitation; and he closes a discussion of this question with the statement that, based upon this study, approximately 70% of each year's graduates will eventually limit their practice to a specialty. It would certainly seem to be basically sound that regulatory measures dealing with specialisation should be both national in scope and of uniform application in all states. The consensus of professional opinion, at least in this country, leans heavily to the view that all regulatory measures should remain within the medical profession itself; for, otherwise, the "basic doctor" or general practitioner would inevitably be jeopardised by such legislative division. However, in 1932 the Medical Society of New Jersey, through its House of Delegates, adopted a plan to give recognition to specialties through a credentials committee set up within the society.

One of the first organisations in this country of national scope which sought definitely to elevate the standards and ethics of specialisation was the American College of Surgeons, founded in 1913. While many imperfections still exist within it, in principle, its conception is sound and uplifting, and its purifying force has been unmistakable. In 1916 there was brought into being the American Board for Ophthalmic Examinations. In 1924 the American Board of Oto-Laryngology was organised along similar lines and with like objectives; in 1930 we witness the creation of the American Board of Obstetrics and Gynecology and lastly the American Board of Dermatology and Syphilology. These boards confer no degree nor do they attempt control through any form of legal regulation, their prime objective being the elevation of standards and ethics within the particular groups involved.

With such growing interest in specialism it is not surprising to find the House of Delegates of the American Medical Association in 1931 instructing the Council on Medical Education and Hospitals "to investigate and make recommendations looking to the establishment of proper qualifications of physicians who shall engage in special practice". This Council, in 1933, reported as follows:

"Resolved, That should the House of Delegates so order, the Council is prepared to extend to other special fields of medicine the service which it has rendered in the fields of radiology and pathology to the end that members of the medical profession and others who may be concerned may be able readily to distinguish those who have received training in the various branches of medicine from those who are merely self-constituted 'specialists'."

At this (1933) meeting Dr. Kopetzky, of New York, also introduced a resolution bearing on the same subject. The Reference Committee of the House of Delegates, to which this report and resolution were referred, submitted the following amended resolution which was adopted:

"Resolved, That the Council on Medical Education and Hospitals is hereby authorized to express its approval of such special examining boards as conform to the standards of administration formulated by the Council; and be it further

"Resolved, That the Board of Trustees of the American Medical Association be urged to use the machinery of the American Medical Association, including the publication of its Directory, in furthering the work of such examining boards as may be accredited by the Council."

Since these resolutions were passed last June, interested members from the various groups have been actively at work seeking to devise plans of a broad and national scope which would be not only workable but acceptable and satisfactory to all concerned. On February 10th and 11th, and immediately preceding the annual Congress on Medical Education, Licensure, and Hospitals held in Chicago, representatives from the Council on Medical Education and Hospitals, from the Federation of State Medical Boards of the United States, and from the National Board of Medical Examiners joined with representatives from the various specialty boards already created. At this conference definite concrete plans were laid for the creation of a joint committee, whose purpose will be to harmonise and unify, in a national way, all of the forces involved in this complex and stupendous problem.

J. N. B.

NEXT ANNUAL MEETING

BIRMINGHAM

APRIL 17-19, 1934

Committee on Legislation and Medical Economics

Under this heading will appear from time to time contributions from the committee, issued through its Bureau of Public Relations.

THE BULLETIN BOARD

MORE AND MORE FOR LESS AND LESS—A circular letter from the U. S. Civil Service Commission to Alabama doctors, says, in part:

"Your name is on our list of physicians for examination of applicants for Civil Service. Your fee is \$5.00.

Many doctors, in fact, most of them, have agreed to accept \$2.00,—I am wondering if you will reduce your fee accordingly?"

A copy of the certificate of examination shows an exhaustive physical examination is required, including eyes for distance, color vision, complete nervous system, tests for hearing, urinalysis and so on.

"Most of these applicants," pleads Uncle Sam (not literally), "earn starvation wages."

Who pays them? Uncle Sam, who asks the doctor to be the goat.

* * *

TOO STEEP—Following complaints from the Civil Works Administration that doctors in some counties had charged too much for treatment of C. W. A. workers, Dr. Jas. R. Garber, President of the Association, said:

"Have only one remedy to suggest: Ask County Societies to elect a doctor, who will pass on disputed bills. He can arbitrate between physician and government. C. W. A. should pay him for his services. His decision final."

The Committee has written County Society presidents.

* * *

EXPERT—John Martin of Montgomery, is Director of the Bureau of Legislation, a sub-committee of the Committee on Legislation and Medical Economics.

That is another way of saying John is expert-at-large to the Association on medical law, legislation, and medical statistics. Every County Society and every doctor with problems should call on him for assistance. And give him co-operation.

Committee on Maternal and Infant Welfare

The Committee is trying to stimulate added thought on maternal and infant welfare by presenting to the Journal each month a short timely article of interest to general practitioners as a whole.

THE INTESTINAL TRACT OF THE YOUNG BREAST FED BABY

BY

HUGHES KENNEDY, JR., M. D.
Birmingham, Ala.

The intestinal tract of the young breast fed baby is the most mistreated part of the body in early infancy. This is due to a lack of proper information as to what to expect. The baby may have a small loose stool with each nursing and again between several of the feedings, totaling seven to ten stools in twenty-four hours. There may even be a tinge of green. This is not only not abnormal but is the usual occurrence if the baby is getting sufficient food. If the weight gain is satisfactory, there should be no concern. As soon as warm milk arrives in the stomach, peristalsis begins and fecal matter appears in the lower rectum. Instead of being retained there and expelled only once or twice a day, it seems to run out into the napkin just as though no sphincter were present. In other words, the baby apparently exercises no sphincter control. If these babies are left alone, after several weeks, the stools diminish in number until there are only two to three a day. If this condition is not recognized as being normal, laxatives or purgatives are given. Soon the habit is formed and a constipated baby is the result. One of the tragedies of infancy is the breast fed baby that is weaned due to the erroneous idea that these frequent loose stools are abnormal.

There is another class of babies that presents a picture just opposite to the above group. With this type, the mother will report that the baby is constipated. He will strain and fuss and seem unable to defecate. If a suppository is inserted, a loose stool results. What is it that prevents the baby from expelling this loose movement by himself? If the finger is inserted into the rectum, it will be found that the anus is extremely tight and that as the insertion is made, the baby strains and the muscle

seems to become even tighter. Instead of relaxing the anal muscle when the desire to defecate occurs, the baby does the reverse and tightens it. If these babies are purged or are given a daily suppository, temporary relief is accomplished but habit formation results. The correct treatment is usually very simple. The little finger should be inserted into the rectum for three minutes three times a day. If this is continued for three or four days, the anus should be sufficiently stretched to permit the easy passage of the stool. If the baby has been depending on suppositories, it may be necessary to use small doses of milk of magnesia for several days in order to give him sufficient urge to initiate the defecation. Having received the urge, the anus will relax and the stool is easily expelled. Real constipation in the breast fed baby is usually due to insufficient food. When real constipation does occur, mineral oil and mineral oil emulsions are less habit forming and usually more satisfactory than are purgatives.

It is believed that many cases of severe constipation in infancy and early childhood are due to the failure to recognize and properly treat the above types of babies.

Committee On Prevention of Blindness and Deafness

A PRELIMINARY REPORT WITH RESOLUTIONS AS TO CONDITIONS AT THE ALABAMA INSTITUTE FOR THE DEAF AND BLIND*

By

HARVEY SEARCY, M. D., Chairman

For seventy-five years one child out of every eight sent to the State Schools for the Blind and the Deaf at Talladega (now the Alabama Institute for Deaf and Blind) has been condemned to blindness, although in most of these cases a pair of glasses, treatment, or an operation would have restored sight. Such boys and girls, with partial vision, with shields placed over their eyes, have been set to learning the touch system for the totally blind—(The Braille System).

In education, Alabama has recognized only two classes of children, those who see and

hear well, and those who are totally blind and deaf.

These two classes have had educational facilities provided for them. The large group in between, made up from those who see partially, and hear partially, has been ignored. The members of this group have been forced to take training as if they were unable to see at all. This, of course, has been because the schools for the blind and the deaf were, so far as their teaching facilities were concerned, schools for the totally blind and the totally deaf.

But small provision has been made for examination of children entering these schools, and where such examinations were made no worth-while facilities for carrying out recommendations were at hand.

There follow the resolutions approved by this Committee after its investigation of the conditions existing in the Alabama Institute for the Deaf and Blind at Talladega:

Whereas, Approximately 25% of the students in the Alabama School for the Blind are not totally blind but have sufficient vision to be taught by sight instead of by the Braille method of touch, we recommend that special provision be made to have a specially trained teacher, or staff of teachers, in that institution to teach those students to use what vision they may have.

Whereas, Probably 12% of the pupils in the Alabama School for the Blind can have their sight so restored by glasses, treatment or operation that they can go home and enter the regular public schools, we recommend that provision be made to provide hospital attention, operation, medical treatment and whatever else is necessary to give them this advantage.

Whereas, Approximately 25% of the children who are pupils in the Alabama School for the Blind have defective vision which may be corrected by glasses, proper treatment, or operation, and since they cannot be satisfactorily taught to read lips or to study without this restoration of their sight, we recommend that provision be made to give these children the glasses, medical treatment, or operation necessary to restore good vision.

Whereas, The Alabama Schools for the Deaf and Blind have been in existence for seventy-five years and no adequate pro-

*Issued through the Bureau of Public Relations.

vision has ever been made for medical examinations to determine whether or not students are really blind or deaf, and no provision has ever been made to give pupils glasses, refraction, or adequate medical attention for the eyes and ears, we recommend that provision be made for this necessary service.

Specifically, it is recommended that \$5,000 be appropriated by the State to provide for examination, treatments, operations, etc.: That a special board be appointed to supervise disbursement of this fund.

It is further recommended that in the future this institution seek competent medical advice as to the care and treatment of students who are being admitted in order that correctable or improvable difficulties may receive attention.

Whereas, There are in all the public schools of the State students with defective vision or hearing who cannot be given competent instruction by the regular public school methods, we recommend that especially trained teachers be provided for these students, in those schools.

Only one teacher to several thousand per capita of the general school population would be required. The removal of these hard-to-teach children from the regular grades by provision of additional teachers would contribute a saving to the school system instead of being an added burden.

Whereas, There are in the rural sections public school students with defective vision or hearing who cannot be taught by the regular public school methods, we recommend that where there are not numbers sufficient to warrant providing a specially trained teacher they be sent to the State Schools for the Deaf and Blind, when, and if, instruction by specially trained teachers for the partially blind and deaf is offered and provided in these schools.

"Resistance" Claims in Food Advertising—"Resistance" produced by adequate nutrition is not to be confused with immunity resulting from antibodies in the body fluids produced by the body cells in their defensive reaction against pathogenic organisms and their toxins. Food advertising should conform to this established standard. (Jour. A. M. A., January 13, 1934, p. 130.)

Program Notes

(See succeeding pages for complete program)

Address of welcome at the annual session, convening at the Tutwiler Hotel, Birmingham, April 17-19, will be delivered by Dr. George S. Graham, President, Jefferson County Medical Society, hosts to the Association.

Dr. James S. McLester and Dr. James B. McLester cordially invite the members of the Association and visiting physicians to tea to meet Dr. Russell L. Cecil, 5:30 to 6:30 P. M., Wednesday, April 18, 930 South 20th Street.

The Phi Beta Pi Alumni Association of Alabama will have a dinner at 6:30 P. M., April 18, at the Tutwiler Hotel. All visiting Phi Beta Pi's are asked to register at the time they register for the general session of the Association. Dr. Ralph McBurney, University of Alabama, will act as toastmaster.

On the occasion, the newly obtained charter will be presented for the signatures of those present.

PROGRAM

SIXTY-SEVENTH CONSECUTIVE ANNUAL SESSION OF THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA

PRECONVENTION MEETING

TUSCALOOSA

April 16, 1934

HOSTS

The Tuscaloosa County Medical Society

COMMITTEES IN CHARGE

Ralph McBurney, President, Chairman Ex-Officio

Program and Inspection of Institutions

Stuart Graves

(School of Medicine)

W. D. Partlow

(Bryce Hospital)

George L. Johnson

(Veterans' Hospital)

Entertainment

Alston Maxwell, Chairman

J. M. Forney

Roscoe Shamblin

John Shamblin

Invitations and Welcoming

T. H. Patton, Chairman

Joe Thomas

G. B. Conwell

A. A. Kirk

Altson Fitts

G. W. Hall

J. J. Kennedy

P. B. Mayfield

G. C. Merriam

James L. Booth

Transportation

Maxwell Moody, Chairman

E. C. Hagler

S. T. Hardin

C. P. Bell

J. S. Christian

J. S. Bealle

J. H. Patton

M. K. Patton

S. G. Hamilton

W. M. Peters

John Wilson

Dinner

D. W. Ward, Chairman

A. M. Walker

J. E. Shirley

Ladies

George Searcy, Chairman

Harvey Searcy

Charles Abbott

General Finance

O. C. Belcher

(Treasurer of the Society)

Woman's Auxiliary

Mrs. G. H. Searcy, Chairman

Mrs. H. B. Searcy

Mrs. Charles Abbott

PROGRAM

The program will include general assembly and registration in the Medical School Auditorium at 2:00 P. M.; followed by a tour of inspection of the Medical School and the U. S. Veterans' Hospital, and a general sight-seeing tour of the grounds of the Partlow Home, Bryce Hospital, the University, and various points of interest in the City of Tuscaloosa. The inspection tours of the Medical School and of the Veterans' Hospital will be in charge of Dr. Stuart Graves, Dean of the School of Medicine, and Dr. George L. Johnson, Executive Officer of the Veterans' Hospital. During these inspection tours, talks to various groups for educational and informative purposes will be made by members of the respective staffs of these institutions.

Ample transportation, with members of the reception committee in charge, will be provided.

A dinner for doctors and their ladies will be held from 6:30 to 8:00 P. M. Features of this part of the program will consist of a varied entertainment, followed by brief words of welcome by Dr. Ralph McBurney, President of the Tuscaloosa County Society, and response by Dr. James R. Garber, President of the State Medical Association. This will be followed by the introduction of and remarks by Dr. David S. Moore, President of the Medical Alumni Association of the University of Alabama. The speaker of the evening, whose name will be announced later, will follow with a subject which shall be humorous or of general interest.

Following the dinner, there will be a clinic at Bryce Hospital from 8:00 to 9:30, conducted by Dr. W. D. Partlow and associates. The clinic will close in plenty of time to allow for the trip back to Birmingham. The highway is paved all the way.

There will be ample entertainment, provided by the Woman's Auxiliary of the Tuscaloosa County Society, for the ladies who do not care to accompany their escorts upon the inspection tours, or to the Bryce Hospital clinic.

The Tuscaloosa County Society is aiming to make the whole occasion one that no member of the State organization can afford to miss.

To one who has never visited Tuscaloosa, the trip alone will be worth while. To those who have not visited the city for some years past, the wonderful growth and progress in all lines of endeavor will be surprising.

POINTS OF INTEREST

The history of the city is unique in that it is named after the famous Choctaw Chieftain, Tuskaloosa. This is a pure Choctaw compound word from Tuska (warrior) and Loosa or Luza (black), which by inversion into English has become "Black Warrior". The town itself is picturesquely situated upon the river which bears this name.

The first settlement of whites at Tuscaloosa was in 1816 by William Wilson, Jonathan York, Patrick Scott, Josiah Tilly, Pleasant H. Dearing, John Barton, John Click, Mathew Click and Levin Powell. The first log house was built by William Wilson, near the spot where the ruins of the old capitol building now stand. Up to eleven years ago, this building was used as a school for young ladies, and known as Central College, with Dr. J. H. Foster as President. It was destroyed by fire in 1923.

Mr. Thomas Maxwell, in a paper read before the Alabama Historical Society, July 1, 1879, tells us that the first infantile voice ever heard upon the plain of Tuskaloosa from Anglo-Saxon lips, was, strange as it may seem (apologies to Ripley), from those of one who became a physician. He was Dr. William A. Cochrane, son of Hiram Cochrane. William was not born in what is now Tuscaloosa, but by the wayside while his family was en route to settle here.

The first brick house was built by a physician, Dr. James Guild, father of Dr. Lafayette Guild, famous as a surgeon in Lee's Army, and who here rests in peace in the old family burial lot in Evergreen Cemetery.

Tuscaloosa is noted for its hospitality, beautiful churches, excellent schools, civic organizations, and industries. One is inspired by its parkways, broad streets, and wonderful old oak trees. It is from these venerable old trees that Tuscaloosa receives the sobriquet of "Druid City".

Here also is situated the State University, founded in 1831, which under the guiding hand of Dr. George H. Denny has grown during the twenty-three years of his guidance into one of the most outstanding institutions of learning in the South. On the campus is the "Gorgas Home" where lived General Josiah Gorgas, seventh president, and where his illustrious son, Alabama's own Dr. William Crawford Gorgas, often visited as a young man when on leave from the Army. Dr. Gorgas' two sisters, Misses Mary and Maria, still live in the old family home so filled with tradition and so typical of Southern architecture. Therein are to be found many trophies and gifts to General Gorgas from Kings and potentates. Visitors to the home are always graciously received and shown many of these interesting things that should be dear to the hearts of those who are Alabamians by birth or adoption.

The State Medical School, State Hospital for the Insane and the U. S. Veterans' Hospital are institutions that should interest every student of the art of healing. This preconvention meeting will afford enlightenment and entertainment of such order that no member of the State Medical Association and his lady can afford to miss it.

PROGRAM
OF
THE GENERAL SESSION

BIRMINGHAM
APRIL 17-19, 1934
THE TUTWILER HOTEL

HOSTS TO THE ASSOCIATION
The Jefferson County Medical Society

COMMITTEES

Arrangements and Exhibits

W. L. Cowles, Chairman
Karl Kesmodel Joe Donald

Entertainment

Alfred Walker, Chairman
A. B. Harris Frank Wilson

Finance

Earl Conwell, Chairman
Ralph Morgan R. M. Coston
C. H. Ford E. D. Lineberry

Little Theatre

John Simpson, Chairman
W. S. Littlejohn Edgar Givhan

OFFICERS OF THE ASSOCIATION

President

James R. Garber.....Birmingham

Senior Vice-President

W. M. Salter.....Anniston

Junior Vice-Presidents

Southeastern Division

G. W. Williamson.....Hartford

Northwestern Division

E. D. McAdory.....Cullman

Southwestern Division

A. B. Coxwell.....Monroeville

Secretary

Douglas L. Cannon.....Montgomery

Treasurer

J. U. Ray.....Woodstock

The State Board of Censors

W. D. Partlow, Chairman.....Tuscaloosa
C. A. Thigpen.....Montgomery
J. D. Perdue.....Mobile
M. Y. Dabney.....Birmingham
E. V. Caldwell.....Huntsville
S. A. Gordon.....Marion
D. T. McCall.....Mobile
J. S. McLester.....Birmingham
F. W. Wilkerson.....Montgomery
M. S. Davie.....Dothan

State Health Officer

J. N. Baker.....Montgomery

GUESTS OF THE ASSOCIATION

BERT W. CALDWELL
Executive Secretary
American Hospital Association
Chicago

RUSSELL L. CECIL
Professor of Clinical Medicine
Cornell University Medical College
New York City

MORRIS FISHBEIN
Editor
Journal of the American Medical Association
Chicago

R. G. LELAND
Director
Bureau of Medical Economics
American Medical Association
Chicago

J. R. McCORD
Professor of Obstetrics and Gynecology
Emory University School of Medicine
Atlanta

J. A. MYERS
Associate Professor of Medicine
University of Minnesota Medical School
Minneapolis

PROGRAM

First Day, Tuesday, April 17

Morning Session

9:00 A. M.

Essayists, other than guest speakers, will be limited to 15 minutes; discussants to 4 minutes. The time limit will be rigidly enforced.

1. Symposium on Bronchiectasis:
 - 9:00- 9:15-(a) Pathology—
A. W. Blair, University.
 - 9:15- 9:30-(b) Etiology, Symptomatology and Treatment—
E. G. Givhan, Jr., Birmingham.
 - 9:30-10:00-(c) Discussion. The discussion will be opened by J. Harold Watkins, Montgomery, and L. O. Davenport, Birmingham.
2. Symposium on Anemias of Early Infancy:
 - 10:00-10:15-(a) Pathology—
George S. Graham, Birmingham.
 - 10:15-10:30-(b) Etiology and Symptomatology—
Hughes Kennedy, Birmingham.
 - 10:30-10:45-(c) Treatment—
C. E. Abbott, Tuscaloosa.
 - 10:45-11:15-(d) Discussion. The discussion will be opened by J. Mac Bell, Mobile, and C. A. Grote, Huntsville.

3. 11:15-11:30—Common Indications for Splenectomy: With Case Reports—
J. P. Collier, Birmingham.
- 11:30-12:00—Discussion. The discussion will be opened by J. M. Mason, Birmingham, and E. F. Moody, Dothan.

Afternoon Session

Tuesday

Call to Order, 2:30 P. M.

Unfinished and Miscellaneous Business

1. Symposium on Stomach and Duodenal Ulcer:
 - 2:30- 2:45-(a) Etiology and Symptomatology—
E. S. Sledge, Mobile.
 - 2:45- 3:00-(b) X-Ray Diagnosis—
I. M. Gravlee, Mobile.
 - 3:00- 3:15-(c) Medical Management—
Seale Harris, Birmingham.
 - 3:15- 3:30-(d) Surgical Management—
Lloyd Noland, Fairfield.
 - 3:30- 4:00-(e) Discussion. The discussion will be opened by Drayton Doherty, Selma; C. Hal Cleveland, Anniston, and Fred Wilkerson, Montgomery.
2. Symposium on Hematuria:
 - 4:00- 4:15-(a) Etiology, Symptomatology and Diagnosis—
A. S. Frasier, Dothan.
 - 4:15- 4:30-(b) Medical and Surgical Treatment—
T. Brannon Hubbard, Montgomery.
 - 4:30- 5:00-(c) Discussion. The discussion will be opened by J. G. Bedsole, Jackson, and Byron Bruce, Opelika.

Evening Session

Tuesday

Call to Order, 8:00 P. M.

1. 8:00- 8:45—Diagnosis, Treatment and Prevention of Tuberculosis—
J. A. Myers, Minneapolis.
- 8:45- 9:15—Discussion. The discussion will be opened by Woodfin Cobbs, Montgomery, and M. E. Smith, America.
2. Presentation of the President by the Senior Vice-President—
W. M. Salter, Anniston.
3. 9:15- 9:30—The President's Address—The Physician as Scholar and Statesman—
James R. Garber, Birmingham.
4. 9:30-10:00—Syphilis and Pregnancy—
J. R. McCord, Atlanta.
- 10:00-10:30—Discussion. The discussion will be opened by J. E. Leach, Gadsden, and E. K. Hanby, Attalla.

Second Day, Wednesday, April 18

Morning Session

Call to Order, 9:00 A. M.

1. 9:00- 9:10—The President's Message—
James R. Garber, Birmingham.
2. 9:10- 9:20—Report of the Vice-Presidents—
The joint report of the Vice-Presidents will be made by the Senior Vice-President, Dr. W. M. Salter, Anniston.
3. 9:20- 9:30—Report of the Secretary—
Douglas L. Cannon, Montgomery.
4. 9:30- 9:40—Report of the Treasurer—
J. U. Ray, Woodstock.
5. 9:40- 9:45—Report of the Committee of Publication—
Fred Wilkerson, Montgomery.
6. 9:45-10:00—Legislation and Medical Economics—
Report of the Committee by
A. L. Glaze, Chairman.
7. 10:00-10:15—Mental Hygiene—
Report of the Committee by *F. A. Kay, Chairman.*
8. 10:15-10:30—Maternal and Infant Welfare—
Report of the Committee by *A. E. Thomas, Chairman.*
9. 10:30-10:45—Prevention of Cancer—
Report of the Committee by *K. F. Kesmodel, Chairman.*
10. 10:45-11:00—Prevention of Blindness and Deafness—
Report of the Committee by *H. B. Searcy, Chairman.*
11. 11:00 A. M.—Jerome Cochran Lecture: The Present Trend in the Study of Arthritis and Rheumatic Diseases—
Russell L. Cecil, New York City.
12. 12:00-12:15—Undulant Fever—
James G. McAlpine, Montgomery.
- 12:15-12:45—Discussion. The discussion will be opened by Geo. Denison, Birmingham, and Ralph McBurney, Tuscaloosa.

Afternoon Session

Wednesday

Call to Order, 2:30 P. M.

1. Symposium on Cancer—Plain Talk About Cancer:
2:30-2:45-(a) The Doctor and the Cancer Patient—
K. F. Kesmodel, Birmingham.
2:45-3:00-(b) Potentialities of Skin Lesions—
Toulmin Gaines, Mobile.
3:00-3:15-(c) Breast Tumors—
Alston Maxwell, Tuscaloosa.
3:15-4:00-(d) Infection versus Cancer of Female Genitalia—
Neil Sellers, Anniston.
4:00-4:30-(e) Discussion. The discussion will be opened by Otis Lisenby, Atmore, and Earle Drennen, Birmingham.

Evening Session

Wednesday

PUBLIC MEETING

8:30 P. M.

ADDRESS

The Trend of the Times
Morris Fishbein
Chicago

Reception and Dance

Last Day, Thursday, April 19

Morning

Call to Order, 9:30 A. M.

1. Symposium on Medical Economics:
9:00-9:30-(a) *Bert W. Caldwell, M. D., Chicago.*
9:30-10:00-(b) *R. G. Leland, M. D., Chicago.*
10:00-10:30-(c) Discussion. The discussion will be opened by A. L. Glaze, Birmingham, and French Craddock, Sylacauga.
2. 10:30 A. M. Business Meeting of the Association Sitting as the Board of Health of the State of Alabama.
 1. Report of the Board of Censors
 2. Revision of the Rolls
 3. Election and Installation of Officers.

Afternoon

3:00 P. M. Matinee—Men In White—

A three-act play for visiting physicians and the members of their families, Birmingham Little Theatre. A complimentary presentation to the Association from the Jefferson County Medical Society.

DEPARTMENT OF PUBLIC HEALTH

BUREAU OF ADMINISTRATION

J. N. Baker, M. D.
State Health Officer in Charge

VACCINATION AGAINST DIPHTHERIA

The question has frequently been asked: Is there objection to the giving of diphtheria toxoid and typhoid vaccine to the same patient simultaneously?

Ramon of Paris, who, in 1925, gave the first impetus to experiments leading up to a reduction in the number of doses of toxoid necessary to produce immunity and which finally culminated in the perfection of the one dose alum precipitated toxoid by Havens and Wells of the Alabama State Board of Health, has recently confirmed the observation of Crouzon that the immunising properties of toxoid are definitely strengthened by an injection of antityphoid vaccine given at the same time. His statement is that the two vaccinations (antidiphtheritic and antityphoid) given simultaneously, instead of inducing an antagonism, mutually strengthen each other in a remarkable manner. One secures in this way a much stronger and more durable immunity. This is an observation of first importance to all health workers as well as physicians. No anxiety for hesitancy need be felt in pursuing such a practice; on the contrary, parents should be encouraged not only to see that their children receive this double protection, but also that they get both at the same time.

THE CIVIL WORKS ADMINISTRATION AND ALABAMA'S BEDS FOR TUBERCULOSIS

Although Alabama has one of the outstanding health set-ups in the country, it has lagged behind miserably in its tuberculosis work. There is not a private tuberculosis sanatorium in the State and until recently there were only four county sanatoria; and these are finding it most difficult to operate. They are located at Birmingham, Montgomery, Mobile, and Gadsden.

In order to aid in the maintenance of the already existing sanatoria and to encourage other counties to provide sanatorium beds, a bill was passed by the 1931 Legisla-

ture providing a subsidy of \$1.00 a day per patient to county or district sanatoria that meet the requirements laid down by the State Board of Health. Unfortunately no funds were available to make the bill active.

In January 1931 the State travelling chest clinics began to function as a diagnostic service to the physicians of Alabama. From January 1931 through April 1933, 1,647 new cases of pulmonary tuberculosis were added to the records by these clinics alone. The reporting of cases by physicians increased as a result of the interest aroused in the disease. Despite these facts no new beds were provided in the State over this period for the handling of tuberculosis cases.

With the advent of the Civil Works Administration late in 1933 many of the counties seeking worth-while projects asked the State Health Department for plans and advice concerning tuberculosis sanatoria construction. Some counties decided that, with maintenance costs to consider, it was better to consider the Burr type cottage construction for the isolation of their manifest cases. Many counties figured on the possibility of a county general hospital with a tuberculosis division; still others were interested in tuberculosis preventoria for children.

To date, March 9, 1934, Morgan County has practically completed a 40-bed, brick sanatorium and Jackson County is well along on a 30 to 35-bed brick-tile structure. Both of these projects anticipate private donations for equipment and will care for tuberculosis cases only. A preventorium is being constructed in Tuscaloosa County. Still other counties have built varying numbers of Burr type cottages.

It is an excellent thing for counties to utilize Civil Works Administration labor and materials for such worthy projects; and, with the wide-spread interest being aroused in providing bed space for the increasing number of *diagnosed* cases of pulmonary tuberculosis, it is hoped that at the next regular session of the legislature, sentiment will prevail to obtain appropriations for their partial maintenance.

R. A. B.

BUREAU OF LABORATORIES

James G. McAlpine, Ph. D., Director

INCIDENCE OF RABIES IN ALABAMA

Rabies constitutes one of the greatest public health problems in Alabama. Since there is a belief that the incidence of this disease is increasing, especially in our Southern States, it was thought advisable to correlate the data on this subject which have accumulated in the laboratory files.

Table I

RESULTS OF RABIES EXAMINATIONS IN SIX SOUTHERN STATES

State	1929		1930		1931		1932		1933	
	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.
Alabama	518	560	443	611	613	589	836	779	827	693
Florida	182	246	69	164	102	179	75	223	*	
Georgia	289	363	507	543	351	452	343	448	*	
Mississippi	150	131	178	138	187	156	131	161	*	
Tennessee	468	500	387	652	479	597	534	560	*	
Texas	383	1309	372	1409	287	1193	342	1047	*	

†Unsatisfactory specimen not included.

*Information not obtained.

The figures compiled in Table I are presented through the courtesy of Dr. E. L. Bishop, Commissioner, Tennessee State Department of Health, who has been gathering data on the prevalence of rabies. From these statistics two facts become apparent. First, the number of animal heads which have been examined in Alabama is greater than in any of the adjoining states, and even greater than Texas which is vastly larger in area. One possible explanation for this difference may be that our widespread branch laboratory system offers better facilities for prompt diagnosis. Hence these totals may not be altogether comparable. Secondly, during the past two years the number of heads received at the Bureau of Laboratories has increased by one-third over the number reported in 1929. This lends proof to the belief that the incidence of rabies is becoming greater in Alabama, at least. The other figures cited in Table I do not indicate that this noticeable increase is occurring in the other states.

Table II

ANIMAL HEAD EXAMINATIONS FOR PERIOD OF FIVE YEARS, BY ALL LABORATORIES OF STATE SYSTEM

	1929	1930	1931	1932	1933	Total
January	91	98	82	165	133	569
February	111	101	76	151	132	571
March	104	109	104	150	144	611
April	98	113	100	158	172	641
May	118	113	107	155	167	660
June	77	120	104	149	147	597
July	87	93	124	152	156	612
August	89	80	100	124	135	518
September	87	88	111	134	104	524
October	112	70	115	111	106	514
November	89	53	108	133	109	492
December	67	68	134	103	126	509
Total	1130	1106	1265	1685	1631	6818

In Table II the examinations by months are listed for the past five years. It will be seen that the first six months of the year furnish more laboratory material than the second six months. Rosenau¹ has stated that "rabies is commonly supposed to prevail only during the hot months, but it is in fact more prevalent in cold weather. Exposure to cold seems to increase its virulence." Our results seem to indicate that more cases occur during the spring.

Table III
COMPOSITE TABLE SHOWING AVERAGES BY MONTHS OF HEADS EXAMINED FOR PERIOD OF FIVE YEARS

	Total Average	Percentage Positive	Percentage Unsatisfactory
January	113.8	55.2	2.1
February	114.2	53.3	2.45
March	122.2	52.3	4.4
April	128.2	50.9	4.5
May	132.0	50.4	5.7
June	119.4	42.9	7.8
July	122.4	42.9	6.8
August	103.6	44.0	8.3
September	104.8	47.1	10.4
October	102.8	52.8	4.2
November	98.4	54.2	1.7
December	101.8	57.1	5.1
Grand Average	1363.6	50.1	5.1

Table III is a composite of Table II with additional information regarding positive and unsatisfactory specimens. It will be noted that the average per cent positive for five years is 50.1, with a monthly variation ranging from 42.9 in June and July to 57.1 in November. We have no explanation at this time for such a wide discrepancy. In regard to the unsatisfactory specimens it will be seen that the largest numbers, on the whole, were received during the hot months of the year. This indicates that greater care should be exercised in packing and shipping heads in warm weather. Nevertheless, it should be remembered that a certain percentage of these were mutilated and not decomposed.

Table IV
RABIES TREATMENTS DISTRIBUTED BY STATE DEPARTMENT OF HEALTH

	1929	1930	1931	1932	1933	General Average
January	137	107	173	428	306	230
February	161	144	171	329	333	237
March	115	193	137	248	342	207
April	107	273	208	377	336	260
May	147	175	235	373	382	262
June	127	144	236	284	345	227
July	119	108	255	414	195	208
August	117	97	203	270	264	190
September	87	147	263	314	245	211
October	156	163	262	186	178	189
November	133	129	185	252	265	192
December	119	105	279	201	277	196
Total	1525	1785	2667	3676	3518	

The data concerning the treatments distributed during the past five years by the State Department of Health are presented in Table IV. These figures correlate rath-

1. Rosenau, M. J.: Preventive Medicine and Hygiene. D. Appleton & Co. 1931.

Table V*
ANIMALS LISTED BY SPECIES EXAMINED BY BUREAU OF LABORATORIES

	1929			1930			1931			1932			1933		
	Total	Pos.	Uns.†	Total	Pos.	Uns.	Total	Pos.	Uns.	Total	Pos.	Uns.	Total	Pos.	Uns.
Dog	901	475	53	852	468	34	1015	474	46	1324	659	52	1297	643	91
Cat	142	20	15	139	15	13	132	18	20	165	20	11	170	34	16
Cow	34	12	3	27	13	2	26	9	1	61	23	2	66	26	2
Mule	2	0	0	3	1	0	4	1	0	6	3	0	7	2	1
Horse	0	0	0	1	0	0	2	0	0	2	0	1	2	0	0
Hog	4	1	0	6	2	0	6	0	1	8	1	1	13	3	0
Human	0	0	0	0	0	0	2	0	0	1	1	0	1	1	0
Squirrel	3	0	0	5	0	0	4	0	1	4	0	0	3	0	0
Muskrat	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Rat	4	0	0	12	0	1	3	0	2	10	1	2	4	0	0
Rabbit	1	0	0	4	0	1	7	0	0	5	0	0	9	0	0
Chicken	0	0	0	1	0	1	4	1	0	4	1	1	1	0	0
Fox	3	1	0	0	0	0	0	0	0	0	0	0	1	0	0
Goats	1	0	0	1	1	0	2	1	0	0	0	0	1	1	0
Guinea Pigs	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Ground Hog	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Chipmunk	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
O'Possum	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Weasel	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0

*The figures do not include specimens the species of which were not identified.

†Unsatisfactory for examination.

er closely with those presented in Tables II and III. In other words, more vaccine is used during the first six months than in the latter half of the year. Also, it will be seen that the number of treatments distributed in 1932 and 1933 greatly exceeded those of the previous three years. This is in agreement with the statistics on the total heads examined for those years and appears to indicate that rabies is on the increase in Alabama.

In Table V are listed by species the heads examined for the past five years. It will be seen that dogs constitute the greatest menace, with cats second. The percentage of positives varies widely with the species, dogs giving a much higher per cent than cats. These results do not agree with the statement of Rosenau¹ that "rabies in cats . . . is comparatively rare, and but occasionally transmitted to man". The opinion of Williams², that "cats may contract the disease more often than is known, since they frequently develop the paralytic form, and so may not be diagnosed", appears to be more in accord with our findings.

The following conclusions drawn from these data seem to be warranted:

1. The incidence of rabies is increasing in Alabama. The number of animal heads together with the number of treatments distributed during the past five years corroborate this statement.

2. Williams, A. W.: *Hydrophobia in Nelson's Loose-Leaf Living Medicine*. Thomas Nelson and Sons. 1929.

2. Spring, rather than the so-called "dog days", appears to be the season of the year when rabies is most prevalent.

3. All species of animals, including fowls, are susceptible but dogs predominate in number.

4. The possible importance of cats in the spread of this disease should not be overlooked.

BUREAU OF PREVENTABLE DISEASES

D. G. Gill, M. D., Director

FACILITIES FOR THE CARE OF LEPERS

The finding of a patient with leprosy in Mobile this past year and his prompt removal to the National Leper Home at Carville, La., has brought attention again to the facilities offered by the United States Public Health Service for the care of these unfortunates. A recent communication from the Surgeon General may be quoted.

The National Leper Home is a modern hospital which is designed primarily for the care and treatment of lepers. An experienced and well-trained medical and technical staff provides the necessary professional care. Every effort is made to provide the best possible medical and nursing care for the patients in this institution.

At the present time there are 354 lepers under treatment at the National Leper Home. Since the Service assumed control of this institution in 1921, 166 persons have been discharged as being no longer a menace to the public health, and apparently arrested cases of the disease.

It has come to the attention of the Public Health Service within the recent past, that in several states undue hardships are inflicted upon lepers because of the administration of existing laws. In one city, for example, because of archaic laws or leperphobia on the part of officials, a woman who was suffering from leprosy was accorded unnecessarily harsh treatment in the administration of existing regulations regarding the segregation of lepers.

The Public Health Service is prepared to defray the expenses of lepers from any state to Carville, La.; also the expenses incidental to providing the patient with an attendant. It is desired that, if possible, every person suffering from leprosy within the continental limits of the United States be given opportunity to undergo treatment at the National Leprosarium at Carville. It is urged that state health officers bring to the attention of city and local health officers the facilities available there, and to urge that upon the detection of a case of leprosy, transfer to this institution be affected. The Public Health Service, upon request, will be glad to send qualified experts to consult with local physicians or to verify the diagnosis.

The Regulations Governing the Care of Lepers provide:

"The Surgeon General of the Public Health Service is authorized upon request of the proper health authority of any State, Territory, or the District of Columbia, or upon notification, under the quarantine laws or regulations, to send for any person afflicted with leprosy, except an alien subject to deportation, and to convey said person to the United States Marine Hospital, Carville, La., provided that said request is accompanied by satisfactory proof of diagnosis".

BUREAU OF SANITATION

G. H. Hazlehurst, Director

MILK SANITATION RATINGS

The January 26 number of Public Health Reports (Vol. 49, No. 4) contains a report on "Milk Sanitation Ratings of Cities," and includes a list of 97 cities the milk sanitation ratings of which equal or exceed 90.

"The primary reason for announcing such ratings from time to time is to encourage the municipalities of the United States to

attain and maintain a high level of excellence of the public health control of milk supplies. Another reason is to furnish the traveling public with some means of knowing cities in which milk sanitation is properly done. It is emphasized, however, that the Public Health Service does not intend to imply that cities not on the list are necessarily doing poor milk control work. Some cities which are doing excellent milk control work are not included because arrangements have not yet been made for the determination of their milk sanitation ratings by the State milk-control authority. In other cases the ratings which have been determined by the State are now more than two years old, and are therefore out of date."

The list included in this report contains the names of twenty-seven Alabama cities, the milk sanitation ratings of which were made between June 15 and October 7, 1932. This is a greater number of cities than is included from any other state, North Carolina, Mississippi, and Texas having 25, 18, and 12, respectively, cities on the list. Alabamians should not take too great pride in these comparative figures, however, and assume therefrom that milk control in this State—or at least in these cities—is eminently satisfactory. The ratings in these 27 cities were made more than a year and a half ago. Those in North Carolina and Mississippi were made last summer and fall. If ratings in these 27 Alabama cities were to be repeated today a considerable proportion would fall below 90, because of the fact that the specifications for credits in the rating schedule have been raised since 1932, and because the economic conditions in the dairy industry have made it very difficult for the entire rank and file of milk producers to make repairs, replace worn equipment, and install the new construction and equipment prescribed by the more rigid specifications. Furthermore, the reduction in inspection personnel in many of the county health departments, and in the Division of Inspection of the State Health Department, has made longer intervals between inspections unavoidable, and has resulted in somewhat lowered level of sanitary conditions.

What is the interest of the medical profession—individually and collectively—in so technical a phase of public health as municipal milk sanitation ratings? Simply

this: The absence of cases of disease traceable and chargeable to infected milk supplies is grounds for commendation of health departments, but it is not an irrefutable measure of the safety of milk supplies. In this respect it is similar to a negative result in the examination of a diagnostic specimen. The clinical picture—that is, the evaluation of the sanitary conditions under which the entire market supply of a city is produced—may, on the other hand, indicate potentialities of dangerous proportions. These municipal milk sanitation ratings are no more nor less than such evaluations, and do constitute the clinical picture of the milk supply.

It is, therefore, to the interest of the medical profession that all cities in the State maintain presentable milk sanitation ratings, and this interest may be practically manifested by encouragement of health officers to maintain their efforts, and by insistence that municipal authorities support the enforcement of milk control ordinances or regulations by punishing individuals convicted of violations thereof.

Following is a list of the Alabama cities included in the Public Health Service Report:

ALABAMA (27 cities)

City	Pasteurized Milk Rating	Raw Milk Rating	Percentage of Milk Pasteurized	Date of Rating
Andalusia		92	0	June 22, 1932
Athens		95	0	June 15, 1932
Atmore		93	0	Aug. 22, 1932
Auburn		94	0	July 7, 1932
Boaz		94	0	June 29, 1932
Cullman	99	92	28	Sept. 23, 1932
Decatur	94	90	44	Aug. 19, 1932
Flomaton		96	0	Aug. 22, 1932
Florence	92	90	35	July 7, 1932
Fort Payne		94	0	Oct. 7, 1932
Gadsden	99	95	24	Oct. 7, 1932
Guntersville		91	0	June 29, 1932
Hartselle		96	0	Aug. 17, 1932
Huntsville	97	93	53	July 20, 1932
Montgomery	96	90	22	Aug. 26, 1932
Opelika	91	92	21	July 6, 1932
Russellville		93	0	Aug. 22, 1932
Scottsboro		96	0	June 27, 1932
Selma		93	0	Aug. 2, 1932
Stevenson		96	0	June 27, 1932
Sylacauga		93	0	Aug. 2, 1932
Talladega		92	0	Aug. 2, 1932
Tallassee		98	0	Feb. 5, 1932
Tuscaloosa	97	95	75	July 28, 1932
Tuskegee	98	92	52	July 5, 1932
Wetumpka		90	0	Sept. 20, 1932
York		97	0	Aug. 23, 1932

The significance of the above ratings as a measure of present conditions is indicated by the fact that official milk control activities in Andalusia and Tallassee have been discontinued for more than a year, and that in Atmore and Flomaton control has been nominal only for a similar period.

C. A. A.

CURRENT STATISTICS

*PREVALENCE OF COMMUNICABLE
DISEASES IN ALABAMA

	Dec. 1933	Jan. 1934	Estimated Expectancy January
Typhoid	32	23	43
Typhus	59	27	3
Malaria	218	75	55
Smallpox	4	3	56
Measles	337	813	80
Scarlet fever	167	104	125
Whooping cough	137	226	122
Diphtheria	181	137	163
Influenza	258	392	941
Mumps	14	32	138
Poliomyelitis	3	3	3
Encephalitis	6	3	2
Chickenpox	260	189	324
Tetanus	5	7	4
Tuberculosis	254	185	234
Pellagra	32	8	16
Meningitis	1	4	8
Pneumonia	380	328	605
Syphilis (private cases)	178	144	132
Chancroid (private cases)	2	0	9
Gonorrhea (private cases)	156	154	189
Ophthalmia neonatorum	0	1	2
Trachoma	0	2	0
Tularemia	1	0	1
Undulant fever	4	2	0
Dengue	1	0	0
Amebic dysentery	7	2	0
Rabies—human cases	0	0	0
Positive animal heads	73	103	—

*As reported by physicians and including deaths not reported as cases.

The Estimated Expectancy represents the median incidence of the past nine years.

PROVISIONAL MORTALITY STATISTICS

Alabama, December 1933

CAUSES	Number of Deaths Registered Dec. 1933			Annual Rate per 100,000 Population		
	White	Colored	Total	Dec. 1933	Dec. 1932	Dec. 1931
ALL CAUSES	1535	1139	2674	1148.8	1331.8	1009.5
Typhoid fever	1	3	4	1.7	3.0	5.2
Smallpox						
Measles	4		4	1.7		0.9
Scarlet fever	4		4	1.7	0.9	0.9
Whooping cough	7	10	17	7.3	8.3	1.7
Diphtheria	21	4	25	10.7	13.1	14.4
Influenza	65	33	98	42.1	221.6	28.4
Pneumonia, all forms	151	95	246	105.7	104.0	83.2
Poliomyelitis	1		1	0.4	0.4	0.9
Tetanus		1	1	0.4	1.3	
Tuberculosis, all forms	65	99	164	70.5	73.6	81.0
Tuberculosis, pulmonary	60	91	151	64.9	69.2	72.7
Malaria	6	12	18	7.7	6.1	5.7
Cancer, all forms	105	43	148	63.6	62.7	47.7
Diabetes mellitus	19	8	27	11.6	16.5	11.8
Pellagra	10	19	29	12.5	11.3	8.7
Cerebral hemorrhage, apoplexy	98	74	172	73.9	67.9	59.1
Diseases of heart	219	120	339	145.6	140.6	122.5
Diarrhea and enteritis, Under 2 years	24	8	32	13.7	8.7	10.5
2 years and over	10	4	14	6.0	4.8	5.2
Nephritis	118	77	195	83.8	89.2	81.8
Puerperal state, total	17	12	29	12.5	17.0	13.6
Puerperal septicemia	4	2	6	2.6	5.7	2.6
Congenital malformations	16	8	24	10.3	7.8	7.4
Congenital debility and other diseases of early infancy	93	63	156	67.0	54.4	48.6
Senility	16	13	29	12.5	30.0	16.6
Suicides	17	3	20	8.6	7.8	4.4
Homicides	26	58	84	36.1	23.1	18.4
Accidental burns	9	4	13	5.6	6.5	5.7
Accidental drownings	1	1	2	0.9	3.0	0.4
Accidental traumatism by firearms	9	9	18	7.7	6.1	8.8
Mine accidents	4	1	5	2.1	2.2	2.6
Railroad accidents	5	2	7	3.0	6.1	4.8
Automobile accidents	36	13	49	21.0	13.5	18.8
Other external causes	33	25	58	24.9	24.8	19.7
Other specified causes	231	140	371	159.4	145.8	153.6
Ill-defined and unknown causes	94	177	271	116.4	149.3	116.0

Medical News

(Secretaries of county medical societies and other physicians will confer a favor by sending for this section of the Journal items of news relating to society activities.)

The 1934 annual Clinical Congress of the American College of Surgeons will be held in Boston, October 15-19.

* * *

Notice has been received at the Secretary's office of the resignation of Dr. R. S. Hill of Montgomery as a member of the State Board of Censors. It is contained in the following letter to the President of the Association:

Dr. J. R. Garber,
President, Alabama State Medical Association,
Birmingham, Ala.

Dear Dr. Garber:

Nearly twenty years ago without an expression from me of a wish or desire to serve I was elected to membership on the Board of Censors. I have been re-elected three times without opposition. With this continued manifestation of confidence and friendship I can not be insensitive or ungrateful to the Doctors of the State.

Having now to all intent and purpose discharged the duties of my present term on the Board, and it expiring at the next meeting of the Association, I am sending you this, my resignation, as an expression to the profession of my wish regarding future service.

May I, through you, thank the members of the Alabama State Medical Association for the many honors and evidences of friendship shown me during the more than two score of years I have been one of them.

With kindest regards, I remain,

Yours sincerely,
R. S. Hill.

Montgomery, Feb. 12, 1934.

In accepting the resignation Dr. Garber said:

Dr. R. S. Hill,
Montgomery, Alabama.

Dear Dr Hill:

Your letter of February 14th has been received and its contents duly noted. I take this occasion to acknowledge your resignation from the Board of Censors of the M. A. S. A. After the long service that you have performed for the profession of Alabama I can well visualize the sense of relief from responsibility that comes to you upon the occasion of your resignation.

Thanking you for your courtesy and wishing you many years of happy and prosperous life, I am

Cordially yours,
Jas. R. Garber, President.

Birmingham, Ala., Feb. 15, 1934.

Dr. J. D. Perdue of Mobile was appointed by President Garber to succeed Dr. Hill on the Board—the appointment being an *ad interim* one.

* * *

The Houston County Medical Society met in regular session Friday, February 2nd, at 7:30 P. M., with its annual banquet at the Wadlington Hotel. At this time Dr. J. R. Garber, President of the State Medical Association, was the chief speaker. Other visitors were Drs. M. E. Doughty, G. W. Williamson, C. P. McEachern, C. P. Gay, and L. C. Nichols from Geneva County; Drs. G. R. Smith, W. L. Orr, A. D. Matthews from Dale County; Dr. J. G. Wilkinson of Houston County, and Dr. Penn of Boston.

* * *

At a recent meeting of the Tuscaloosa County Medical Society, Dr. K. F. Kesmodel, Chairman of the Association's Committee on Prevention of Cancer, spoke on the control of this disease. This talk was illustrated with motion pictures. The following committee was appointed to represent the Society in the State cancer control program: Dr. T. Herbert Patton, Chairman; Dr. Grover Shamblin and Dr. Henry Goode.

At its February meeting the Society had the pleasure of hearing Drs. M. Y. Dabney and Gilbert Douglas, both of Birmingham. Dr. Dabney spoke on Lesions of the Breast, and Dr. Douglas on Pelvic Infections in the Female. Dr. Douglas' paper was illustrated with original lantern slides.

The March meeting of the Society will be addressed by Drs. Lloyd Noland and Groesbeck Walsh of the Employees' Hospital, Fairfield, on "Some Surgical Aspects of Amebiasis" and "Pneumonia and Massive Atelectasis", respectively.

* * *

In the death of Dr. Henry Green of Dothan on February 22nd the Association lost a member who had been long identified with its activities. In addition to Counsellorship which began in 1900, Dr. Green served as President in 1917. His passing is a distinct loss to organized medicine.

* * *

A meeting of the Northeastern Division of the Association is scheduled for March 13 at the Alabama Hotel, Anniston, Dr. W. M. Salter, Vice-President, presiding.

Book Abstracts and Reviews

A Text-Book of Physiology: By William H. Howell, Ph.D., M.D., Sc.D., LL.D., Emeritus Professor of Physiology in The Johns Hopkins University, Baltimore, Maryland. Twelfth edition. Thoroughly revised. 1,132 pages with 308 illustrations. Philadelphia and London: W. B. Saunders Company, 1933. Cloth, \$7.00 net.

For years, Howell's Physiology has held its place among the relatively few excellent text-books of physiology. The eleventh edition was published in 1930. The tremendous volume of literature and the constant advances in the science of physiology during the past three years make worth while another revision at this time.

There is the study on the need of copper in prevention of anemia; the isolation of the hormone of the adrenal cortex and its use on adrenalectomized rats, and on human beings with Addison's disease; the relation of the anterior pituitary hormone to the reproductive function; the resemblance between vitamins and hormones. With the rapid strides in this science, especially in the field of endocrinology, frequent revision is essential if a book is to be kept up-to-date.

L. L. H. Jr.

The 1933 Year Book of Eye, Ear, Nose and Throat, Practical Medicine Series: Edited by E. V. L. Brown, M. D., Professor of Ophthalmology, University of Chicago; Louis Bothman, M. D., Associate Professor, and George E. Shambaugh, M. D., Clinical Professor of Otolaryngology, Rush Medical College of the University of Chicago. The Year Book Publishers, Inc., Chicago. 606 pages. Illustrated. Price \$2.50.

The abstracted articles in this volume are as well written as those in previous editions of this series and the editors are generous in their personal comments.

References to ocular allergy in conjunction with conditions other than conjunctival affections indicate the desirability of further investigation in this field. Friedenwald's work with tuberculin warrants the opinion that perifocal desensitization rather than perifocal allergic reactions should be obtained.

There are many articles on "Medical Ophthalmology"—articles which should be of interest to the internist and general practitioner; for example, one dealing with the appearance of angiospasm of the retinal vessels and its significance. An outstanding contribution is that of Fuchs on sympathetic ophthalmia, in the management of which he stresses intensive foreign protein therapy. There seems to be a trend toward agreement on the advisability of operative treatment of detachment of the retina.

The editor considers as epoch making the work of Duel and Ballance on the surgical treatment of facial palsy by autoplasmic nerve grafts. There is evident advance in endoscopic diagnosis and treatment of pulmonary conditions. The study of Smith, Lambert, and Wallace on paralysis of the recurrent laryngeal nerve is comprehensive and illuminating.

J. T. C.

The 1933 Year Book of General Surgery, Practical Medicine Series: Edited by Evarts A. Graham, A. B., M. D., Professor of Surgery, Washington University School of Medicine, St. Louis. 826 pages. The Year Book Publishers, Inc., Chicago. Cloth, \$3.00.

The value of a collection of abstracts depends to a large extent on the knowledge and judgment of the editor. The publishers have been fortunate in having had for several years the services of Dr. Graham, who again edits the volume on General Surgery.

From American and foreign journals articles covering every surgical subject have been gathered into a single volume. While the greater part of the book deals with abdominal and thoracic surgery, there are sections on orthopedic and brain surgery also.

In his introduction, Dr. Graham calls attention to the increase in interest manifested in thoracic surgery, points out some of the important contributions in the domain of surgery, such as experiments showing the ineffectiveness of mercurochrome, and the effects of operative removal of an adenoma of the Islands of Langerhans in a case of hyperinsulinism.

The convenience of having hundreds of selected articles gathered into a small book should appeal to those who must read while running.

L. L. H. Jr.

A Manual of Diseases of the Nose, Throat and Ear: By E. B. Gleason, M. D., LL.D., Professor of Otolaryngology, Medico-Chirurgical College Graduate School of Medicine, University of Pennsylvania, Philadelphia. Seventh edition, revised and entirely reset. 651 pages with 261 illustrations. Philadelphia and London. W. B. Saunders Company, 1933. Cloth, \$4.50 net.

This manual, now in seventh edition, should be without competition as a text designed for the student and general practitioner. The ground is well covered and the text is well illustrated. Adequate attention is given to the relation of systemic diseases to the specialty. Some thirty pages are devoted to therapeutic formulas. In scope and purpose the work is comparable to May's "Diseases of the Eye", though it is less epitomized than the latter.

J. T. C.

Ultraviolet Therapy in Oral Diseases—While investigating ultraviolet radiation apparatus and reviewing propagandizing literature for the appliances, the Council on Physical Therapy noted in some instances that, along with clinical indications and therapeutic claims intended primarily for the attention of the physician, odontologic claims were recorded side by side. In other instances separate booklets were prepared for the attention of the dentist. Efforts were made by the Council on Physical Therapy to secure the proper evidence in support of the claims advanced. Manufacturers of the apparatus were asked to submit adequate evidence to substantiate the odontologic claims, but to date the Council has received nothing that would warrant it in accepting ultraviolet radiation apparatus recommended for use in the treatment of oral diseases and conditions. (J. A. M. A., January 13, 1934, p. 129.)

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ANEMIA IN CHILDHOOD*

By
JULIAN G. PALMER, M. D.
Opelika, Ala.

The term anemia is applied to that condition of the blood in which there is an impoverishment of the red cells, a corresponding diminution in the specific gravity and a greater proportional decrease in the amount of hemoglobin. The type that I shall endeavor to describe is not one caused entirely by a disease of the blood making organs, but by other factors which affect these organs. The result is a deficiency of hemoglobin metabolism, or weakness of the blood making organs. Pseudo-lymphatic anemia of infancy, chlorosis of adolescence, leukemia, hemophilia, purpura and pernicious anemia will not be discussed here as they are relatively rare and each requires a separate study.

What I want to call to your attention is the most common of all anemias among children and the most commonly overlooked,—anemia caused by undernourishment.

Infancy itself is a strong predisposing factor in anemia because of the great demands made upon the blood in the rapid growth of the body. Premature infants do not show at birth any difference in percentage of hemoglobin or red blood cells from those seen in normal ones, but in the former group the loss is far greater up to the fourth month. Children born of weak or anemic parents may show a marked anemia at birth, but, as a rule, the trouble is not evident until after the fourth month. We should exercise great care in detecting these cases early and instituting treatment before the damage is great. A slight anemia may go unnoticed by the physician,

with consequent failure on the part of the child to develop normally. He will be delicate and will contract diseases easily. Often we treat children for troubles that do not respond to treatment; likewise we frequently operate on patients who take the anesthetic badly, react slowly, and bleed profusely. Usually these patients will be found to be anemic. The seriousness of these cases is often overlooked even after the mother has called our attention to their existence. Requests of mothers are often considered lightly when they ask for a tonic or something to make an irritable, restless, or nervous child eat. They are told that the child is all right and is only passing through a stage of life when he does not have a very good appetite. On the other hand, the physician may suspect some serious organic or constitutional disease and overlook the common cause.

Among the causes most commonly responsible for this condition are: (1) improper foods, insufficient sunlight, and unhygienic surroundings; (2) rickets; (3) prolonged lactation by mothers physically unfit to nurse their babies; (4) adherence to a milk diet alone after six months of age; and (5) intestinal parasites. The supply of iron of a baby at birth is usually sufficient to meet the demands of growth for the first six months, but after this age lack of adequate food with the milk will cause the child to develop anemia. A sixth cause is hemorrhage, visible or concealed, rapid or gradual. In the new born it may be from the cord, or from a hemorrhagic disease, with or without the escape of blood from the body, as in typhoid, dysentery, purpura, scurvy and intestinal parasites. Finally, toxic or infectious causes are to be considered. These may be organic or inorganic, developing within the body or entering the body from without. Metallic poisoning and toxins, produced by infectious diseases,

*Read at a meeting of the Lee County Medical Society, Opelika.

such as malaria, diphtheria, respiratory infections, tuberculosis, and syphilis, are examples.

The anemic child presents the following picture: He develops gradually a pallor of the skin and mucous membranes. The degree of pallor indicates in a general way that of the anemia, but this is often deceptive and is in no wise to be depended upon. Especially is this true of pallor of the skin. The tissues are flabby, fatigue comes easily, and gastro-intestinal disturbances are frequent. Nervousness, irritability, poor appetite, improper growth, headache, disturbed sleep, chilliness, cold feet and hands, vague pains, constipation, enuresis, hemoptysis, irregular pulse, a murmur at the base of the heart, and shortness of breath are constant symptoms. There is an impoverishment of the red cells, a corresponding diminution in the specific gravity and a greater proportional decrease in the amount of hemoglobin. The blood picture shows a reduction of hemoglobin to sixty per cent or less, a reduction in the number of red blood cells, and the presence of poikilocytosis, anisocytosis, megaloblasts, normoblasts and megalocytes.

PROGNOSIS

This depends upon the cause and treatment obtainable in the different walks of life.

TREATMENT

Search for and removal of the cause is the first objective sought. Particular attention should be given to diet, hygiene, removal of infections, and avoidance of nervous strain and fatigue in school. Patients should have an abundance of fresh air and exercise under supervision. An excess of milk is to be avoided, and the proper vegetables, carbohydrates and fruits given. Meat and eggs should be given as soon as they are tolerated by the child. Children six months old should be given spinach, carrots and vegetable soups properly prepared. Prune pulp and juice are especially rich in iron. Human milk contains .55 mgm. per litre, whereas cow's milk contains only .17 mgm. per litre. Thus it is evident that babies fed on cow's milk require added iron in their diet. Spinach contains .59 mgm. and prune pulp .70 mgm. per tablespoon. Egg yolk contains 1.4 mgm. per litre. We should urge that all babies and children eat

these iron laden foods. Mothers should be taught to begin feeding their babies other foods at six months so as to have them on a balanced diet at nine months when cow's milk is substituted for the breast. Infections should be watched and corrected. Intestinal parasites should be removed.

Among the most valuable medicines are iron citrate and other forms of iron, copper, and arsenic, probably given best in the form of Fowler's solution. Bone marrow, liver, cod liver oil and malt are of great value. Blood transfusion may be resorted to in severe cases where iron, arsenic and diet have failed.

CONCLUSION

Let me urge you to be more careful, more patient, and constantly on the lookout for the underweight, irritable child. Give him a careful examination; locate and eradicate the cause. Our future men and women will be a better race if we do our share in guarding the health of those who are to carry on after we are through. We are prone to treat the major ailments and neglect the seemingly non-important and vague symptoms, which may develop into major proportions and handicap the patient's recovery if not corrected early. If we can save one case from a fatal hemorrhage at tonsillectomy by correcting the blood picture, then our reward is great.

SOME SURGICAL ASPECTS OF ABORTION*

By
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Dr. Hugo Ehrenfest, testifying before a congressional committee under the caption, "Abortion in Relation to Fetal and Maternal Welfare", stated that there are 700,000 abortions in the United States each year and that the number is increasing each decade. It was also brought out before this committee that in the year 1930 there were 15,000 deaths as a result of abortion. If these figures are correct, it is true that there is one death in approximately every

*Read before the Chattahoochee Valley Medical and Surgical Association, Albany, Georgia, July 11, 1933; and the Calhoun County Medical Society, Anniston, November 1933.

47 abortions. Aside from its moral aspects, these figures serve to direct our attention to the surprising frequency of the condition, to its seriousness and to the importance of its being given proper care.

Proper care demands a broad and understanding grasp of the subject. Criminal abortion is not only of common occurrence but it is constantly increasing. However, one should not conclude that every abortion is intentionally induced. Many women are sincerely grieved because of their inability to carry their babies to term. To these women the physician owes first consideration. Much can be done to help relieve them. Among other things, a thorough physical examination will often reveal an etiologic factor that can be corrected by surgery.

Preventive surgical measures logically demand first consideration and such measures should be borne in mind, even though the woman has had no pregnancies. Briefly considered, conditions which increase an abortive tendency are given in the following order:

1. Malpositions of the uterus. Retropositions are common offenders; antepositions, unless extreme, are less frequently causative. All malpositions are amenable to surgery and, when present in a woman who aborts, should invariably be subjected to operation. The type of operation selected should be such as will allow the uterus motility and expansibility.

We have seen abortions, usually about the third month, in which we are sure the condition was induced by previous uterine suspensions which fixed the fundus uteri to the anterior peritoneum just above the symphysis pubis. It is our opinion that this operation should be performed, if at all, only in women who are not subject to pregnancy. To the experienced, other types of operation are almost as simple and have not the objectionable features of fixing the uterus or of producing urinary urgency.

2. Adhesions following infections of the pelvic viscera. Such adhesions, by fixing the womb, interfere with its expansibility and so become a factor in abortion. Surgery may free such a fixed uterus and so in some cases prevent the interruption of subsequent pregnancies.

3. Papillomata of the cervical canal or of the endometrium. These may be re-

moved surgically and allow a woman inclined to abort to carry her pregnancy to full term.

4. Varicocele and tumors of the broad ligament. These should always be treated surgically and, while not regarded as a frequent cause of abortion, their removal may relieve an abortive tendency.

5. Ovarian cysts theoretically should be more likely to lead to abortion than the class just mentioned because of their possible interference with the normal hormone function during pregnancy. The treatment of ovarian cysts is surgical removal with preservation of all normal ovarian tissue.

6. Circumscribed fibromata of any type may be excised and so restore the normal functioning power of the uterus. Our experience, however, indicates that these lesions are more likely to produce sterility than to induce abortion. Abortion is more likely to result when the normality of the endometrium is disturbed as in papillomata and submucous fibromata.

7. Cystitis associated with other lesions of the urinary tract may have a tendency in this direction, particularly if characterized by strangury. When such severity is shown cystoscopic treatment may preserve the life of the fetus.

8. Hemorrhoids, if acute and severe, in a nervous woman should be removed as likely to aggravate an abortive tendency. We believe it is a fortunate thing that the modern trend is toward surgical removal of the hemorrhoidal masses. While both the actual cautery and injection (the latter of which at one time threatened to become very popular) have a place in treatment, their field is limited and they should be employed only in special and carefully selected cases.

Aborting multiparae may show also lacerations which predispose to abortion. This is especially true of extensive and stellate tears of the cervix. Cervical cauterization, so popular in recent years, has its place, but its place is not in tears that extend entirely through the cervix into the uterine body nor those that are so multiple that cauterization will produce extensive scar tissue in women subject to impregnation. These more extensive lacerations should be subjected to such surgery as will restore the parts and so remove a cause of abortion

without handicapping a future delivery. So much for surgery that may be helpful in preventing abortion.

Successful treatment in this, as in all other conditions, depends upon accurate diagnosis and careful differentiation. Any woman not known to be sterile who develops uterine bleeding following missed menstruation should be suspected of either actual or threatened abortion. Care must be exercised to differentiate threatened from incomplete abortion. The size of the os, the amount of blood being lost and the character of the pains are not always positive criteria by which to judge incomplete abortion, for sometimes rest in bed and proper expectant treatment will convert an apparently inevitable abortion into one that was merely threatened. A digital examination under the same aseptic precautions that should accompany a vaginal examination at full term should enable the physician to approximate the condition. If in doubt, in the absence of constitutional symptoms, waiting with proper sedation and rest would be the conservative course and apparently the part of wisdom. Many an ovum may be destroyed and many an unnecessary operation performed by too hasty interference. The former—a tragedy—may be averted by expectant treatment while waiting for organized material to appear in the blood clots or the ovum to occupy, partially at least, the cervical canal or vagina. The latter—a risk—may be avoided in the same way, for the uterus will often empty itself through its own expulsive effort. This is simply another way of saying that the term “inevitable” should never be applied to a threatened abortion and that neither threatened nor complete abortion is a surgical condition. A diagnostic point of interest is that an incomplete abortion renders the cervix the shape of an inverted cone, the base being directed cephalad; a complete abortion gives to the cervix the shape of a cone with the apex cephalad due to the tendency of the internal os to contract in advance of the external os. It should also be remembered that an emptied uterus usually contracts and becomes firm to the touch, whereas one that still retains any portion of the ovum remains more flaccid and soft to the touch.

Operation should be resorted to whenever there are:

1. Continuous severe bleeding in spite of expectant treatment, including rest in bed.
2. A protrusion of organized material into the cervical canal or the vagina, said material being palpable by the examining finger. This indication is not above question unless fever develops or bleeding is too profuse.

3. An extrusion of the ovum into the cervical canal, but not palpable because of a closed external os. This is called “cervical abortion”, a condition indicated by a cervix that has lost its conical shape, being almost as wide as it is long.

4. Incomplete abortion, indicated by the fetus' being seen or portions of organized material being found in the clotted blood, sufficient time having been allowed for complete evacuation of all fetal products. Operation is here indicated because either one of two things may occur: (a) Recurrent hemorrhages from continuous separation of fragments of the ovum, which may devitalize the patient even though the whole ovum should be eventually discharged; (b) Putrefaction of the remnants which may occasion fetid lochia and sapremia.

5. Missed abortion, a rather rare occurrence.

6. Constitutional symptoms in the mother indicated by anemia, rigors, elevation of temperature and tachycardia.

7. Occasionally an effort at self-induced abortion leads to perforation of the corpus uteri and resultant peritonitis. We had one such case in which the woman passed a knitting needle into the peritoneal cavity with severe symptoms following. The abdomen was opened and the puncture closed and covered with serous membrane. Drainage was instituted and after a stormy period the patient recovered.

In applying the principles of surgery, now being considered, the word “abortion” in the expression “incomplete abortion” should lose its technical signification and should include all conditions in which portions of the products of conception are retained within the uterus at any period of gestation. One exception to operation should be observed at this point. If the case when seen is one of general sepsis, no other operative work should be done than to

remove any portion of the ovum that can be reached without undue manipulation and be pulled away without trauma. The case then should be treated as one of sepsis. If the case is one of toxemia as the result of absorption of toxic material from decomposing secundines, the uterus should be regarded as a focus of infection and the offending material removed. Careful operative technique will relieve the toxemia without danger. The uterus in this condition is always soft and boggy and so is easily perforated. Such an accident must be avoided through care and skill developed by experience and conscience. It is our belief that curetting should never be done. Our experience, however, teaches us that recovery is always more prompt in the cases in which the womb has been emptied as early as definitely indicated. In some cases women who were not operated upon remained invalids for months, but the invalidism was terminated when the remnants of conception were removed from the uterus.

Two operations are safely available,—the finger and the placenta forceps. The use of the finger demands that half or all of the hand be introduced into the vagina and one or two fingers into the womb, the left hand over a sterile towel laid over the abdomen opposing the operating hand. With the fingers within the uterine cavity the ovum should be separated from the uterine wall and then expressed from the uterus bimanually.

When forceps are used, they should be introduced into the uterine cavity after catching the lips of the external os in a tenaculum. The secundines should be gently caught and withdrawn.

After either operation it is our custom to sponge the endometrium with gauze held in sponge forceps and saturated with tincture of iodine and alcohol equal parts. If the os shows evidence of closing too soon we introduce a uterine pack saturated with the iodine and alcohol solution. This is allowed to remain for six to eight hours, after which it is withdrawn. Small fragments of organized material are often brought away with the pack. The after care is practically identical with that following a full term delivery.

There are certain cautions which should be observed in all cases so treated.

1. Vaginal examination should never be made except under the most careful asepsis and antisepsis with a shaven perineum.

2. Discretion should be used in resorting to operation—it should not be too hastily resorted to nor should it be postponed till sepsis has developed.

3. If sepsis has developed, the case must be treated systemically, local manipulations being sedulously avoided.

4. Curetting should never be done while the uterus is soft or edematous. The sharp curette should never be used and all manipulations should be deliberate and careful.

5. The strength of the patient should be guarded and her resistance fortified.

INFECTIONS OF THE NASAL ACCESSORY SINUSES*

SOME GENERAL CONSIDERATIONS

By
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The nasal accessory sinuses in man are the residual olfactory organs. In the process of evolution the large distribution of the olfactory nerve became less and less necessary, hence the sinuses were gradually closed off from the nasal chambers until only small openings are present in man. Inflammation of the lining mucous membrane of the walled-off spaces becomes, therefore, a frequent pathologic process. If the sinuses were open more to ventilation and drainage, inflammatory processes within them would occur less frequently, because the perpetuity and destructiveness of the process depend very largely upon the lack of normal ventilation and drainage. It follows, therefore, that when inflammation of the sinuses is present, the first principle of treatment is to establish ventilation and drainage. This may only mean that the swollen and inflamed mucous membrane around the cell openings should be depleted by the application of cocaine, antipyrine, adrenalin or ephedrine, or it may mean that some surgical procedure should be instituted for its relief. Whichever may be necessary, ventilation and drainage of the sinuses are of prime importance, and the re-

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moval of the morbid material is secondary to this.

ETIOLOGY

The etiology of the inflammatory diseases of the nasal accessory sinuses, like that in other mucous-lined cavities of the body, is largely embraced in those conditions which interfere with the drainage and ventilation of the cavities. When good drainage and ventilation prevail, inflammation is rare, except in those cases subjected to virulent infection or in which resistance is lowered by some dyscrasia.

The constitutional diseases having most to do with the causation of sinusitis are syphilis and tuberculosis.

Diseases of the contiguous anatomic structures, as the teeth, hard palate, and outer wall of the nose, may give rise to inflammation of the mucous membrane of the sinuses.

Caries of the root of a tooth beneath the floor of the antrum may cause empyema of the antrum. It has been estimated that nearly one fifth of all chronic empyemas of the antrum have their origin in diseased teeth, while the remainder are due chiefly to intranasal disease and anatomic deformity of the nose.

Foreign bodies in the nasal passages may cause sinusitis by erosion and subsequent infection of the nasal mucosa.

Nasal dressings may cause a damning up of the secretions which undergo decomposition and infection, thus giving rise to inflammation of the sinuses. Too much emphasis cannot be laid upon the untoward results of intranasal tamponing, as it is a fruitful source of inflammatory disease of the nasal and sinus mucous membrane. No nose should be packed in which it is not imperative and no intranasal tampon should be left in place an hour longer than absolutely necessary to accomplish its purpose.

It is probable that most persons succumbing to sinusitis after swimming are infected by their own nasopharyngeal germs, mechanically driven into these cavities under conditions favoring rapid growth and retention of micro-organisms.

Prevention of sinusitis from swimming would seem to be largely a question of warning those with latent nasal infection, "chronic cold" and the like, to keep out of the water.

The local causes predisposing to infection in this region are: anything interfering with the free ventilation of the nasal chambers; congenitally narrow nasal passages, or passages ill-developed due to persistent obstruction from neglected adenoids in childhood; injuries which have produced deviations and spurs on the septum; enlarged turbinates either from repeated acute nasal infection or from pollen and protein sensitization; and infected foci in the neighborhood, such as teeth and tonsils. Dryness of the membranes, usually due to living in overheated rooms, renders the membrane more vulnerable to infection.

The exciting causes are the various micro-organisms responsible for the exanthemata and other infectious fevers. Influenza seems to be particularly prone to leave residual sinus involvement. The normal nasal chambers contain bacteria at all times, but the normal membrane is able to withstand invasion until some influence affects the local resisting agencies or lowers the general resistance of the individual. Likewise, the air continually drawn through the nostrils contains a certain number of organisms, yet they produce no effect till some subsidiary cause becomes operative to lower the individual's resistance.

ACUTE INFECTIONS OF THE SINUSES

The onset is very rarely different from that of an acute cold, coryza or rhinitis. The sinus infection is simply more severe. The symptoms vary greatly according to the virulence of the infection and the resistance of the individual. The amount of discomfort depends considerably on whether the individual has spacious or contracted nasal cavities.

The usual symptoms when established are nasal obstruction with sneezing and a watery discharge. A severe reaction in the mucous membrane blocks the sinus opening and headache ensues. If the opening remains patent there may be no headache throughout the course of the disease and the infection will probably be quickly overcome. As the discharge becomes purulent the swollen membrane of the nose and sinuses gradually subsides, the dilated blood vessels regain their tone and absorption of the exudate in the submucosa goes on until resolution is complete both in the nasal mucous membrane and in the sinuses. The dura-

tion of the purulent discharge in a typical case will be only about a week, when resolution will begin, and the discharge will change to mucopurulent, then to clear mucus, this finally decreasing till reduced to the normal amount,—the process entirely subsiding in the second week.

Symptoms: The general symptoms occurring in the course of such an infection are so well known that they need scarcely be mentioned. There is usually some fever, varying from 100 to 102 F., with a pulse rate of 90 to 100. The amount of prostration when all the sinuses are involved may be extreme. The local symptoms of nasal obstruction with fullness in the head and headache are very distressing and render the victim entirely incapable of concentration, and in many cases there is interference with the ocular muscles producing eyestrain to aggravate the headache.

High temperature up to 105 F., is an untoward symptom. This denotes a very severe infection and usually signifies a blocked sphenoid or the beginning of some intracranial complication.

Chills may occur at the onset or during the course of the disease, most often seen from obstructed drainage in a sphenoid.

Severe headache may occur over the frontal region, over the vertex or in the occiput. It may be so severe as to require opiates for its relief. As a rule, after the first two or three days the congestion subsides, free discharge is established, and the pain is relieved. In severe cases, however, the intensity of the pain continues and may last for a week or ten days, and be so severe as to simulate a beginning meningitis, especially when a sphenoid becomes blocked. The pain in these cases is usually occipital, and with such associated symptoms as retraction of the head and vomiting, may simulate a basilar meningitis. This pain may be associated with marked tenderness on pressure just posterior to the mastoid process. Severe pain in the frontal sinus is usually associated with tenderness over the frontal region.

External swelling is most common over the frontal sinus. Tenderness upon finger pressure may be present. For the examination of the frontal sinus, pressure should be made over the anterior wall above the supraorbital ridge, and under the floor of the sinus near the inner angle of the orbit. In

the examination of the anterior ethmoidal cells, pressure should be exerted at the inner angle of the orbit against the orbital plate of the ethmoid. In examination of the antrum of Highmore, pressure should be made over the canine fossa of the superior maxilla.

Dizziness is not unusual during a severe acute attack.

Some of the complications which I will only mention here are meningitis, cavernous sinus thrombosis, retro-bulbar neuritis and ocular palsies.

Treatment Of The Acute Attack: This is best considered according to the stages of the condition.

Stage Of Onset: Treatment should be almost entirely general. The patient should be put to bed at once and given a cathartic such as calomel or castor oil. This removes intestinal toxins and raises the patient's resistance. Plenty of water or lemonade should be given to produce similar free elimination from the kidneys. The administration of Dover's powder-gr. 3, aspirin-gr. 3, phenacetin-gr. 3, and camphor-gr. one-third will add to the comfort of the patient and will tend to reduce the congestion of the mucous membrane.

During the first forty eight hours "acute noses" should be labeled HANDS OFF. Most all local treatment during this stage is irritating and harmful, except warm soothing inhalations of hot steam to which has been added tincture of benzoin compound—one dram to the pint, or spirits of camphor- $\frac{1}{2}$ dram to the pint. One of the salts of ephedrine dissolved in a bland oil sprayed in the nose will relieve the congestion and promote sinus drainage. This may be repeated every three or four hours. Ephedrine seems to have the quality also of stimulating the ciliary action of the nasal and sinus mucous membrane.

State Of Purulent Discharge: Local treatment in this stage is very important. It not only greatly accelerates recovery but is almost certain to prevent the case from gradually drifting into a chronic condition. If the nasal chambers are badly blocked, a little 4% cocaine solution may be applied, either with an applicator or spray. The toxic effects of cocaine must be remembered. Ephedrine hydrochloride or sulphate used in this same way will be just as effective and is attended by less subse-

quent reaction. Some men use adrenalin in the nose for this purpose, but I prefer to avoid it as the subsequent congestive reaction is too violent; also it frequently produces severe headaches when placed high in the nasal cavity. Gentle carefully controlled suction to remove the muco-pus after shrinking is of marked value. Subsequently, 10% argyrol or neosilvol may be instilled by the postural method with the head in a position of marked opisthotonus. This same treatment should be continued daily or oftener until complete cure is effected. Heat, dry or moist, or the heat from a 500 candle-power lamp, applied over the face, sometimes helps remarkably. Diathermy is used by some.

Surgical methods are rarely indicated in acute conditions of the ethmoid, sphenoid and frontal. Occasionally, in a nose badly blocked, an excision of the anterior end of the middle turbinate or a limited submucous resection of the septum may be necessary. Likewise a sphenoid or antrum may have to be punctured and washed out where pain and toxemia are severe. It is a surgical axiom which holds for anywhere in the body that surgical interference in an acute purulent process should be as conservative as possible, but enough must be done to provide free exit for the pus.

CHRONIC INFECTIONS OF THE SINUSES

The same general and local causes are operative in producing a chronic condition which have been enumerated as causative factors in producing acute conditions. Practically all chronic cases have evolved from either a severe acute attack which has not been treated or from frequent acute attacks.

The greatest number of chronic conditions are found in people with bad anatomic noses. This not only predisposes to acute attacks but renders the field of infection much less accessible and, therefore, less amenable to treatment. Neglecting to take proper treatment during acute attacks or afterward is responsible for many chronic cases. It is surprising how unconcerned many people are in regard to the persistence of a purulent nasal discharge and almost regard "a little catarrh", as they call it, an inevitable incident of their local climate. Physicians have not in the past sufficiently warned their patients of the evil

consequences which may ensue from such carelessness. Chronic sinus conditions can produce as much disability as a limited tuberculous lesion in a lung; and many a person has gone through life as a chronic invalid, labeled a neurasthenic or hypochondriac, because of an undiscovered pus focus in a nasal sinus.

Symptoms—General: There are few ills which produce a state of health called partial disability that render the patients more distressed and miserable. A person half as wretched with tuberculosis would be placed in a sanatorium. Sometimes the depression amounts to real melancholia, but it usually manifests itself as a lack of ambition and power to concentrate. A dull headache or feeling of heaviness is present in most cases for a part or all of the day. Changes in the weather affect the condition, patients being more miserable in high humidity. If there is a free discharge the constant use of handkerchiefs is a great annoyance, especially to the cleanly sensitive individual.

Fever is more often present than suspected. It is usually of a low grade character, and is influenced by conditions of drainage.

Symptoms—Local—Nose: A chronic discharge either purulent or mucoid is usually present, and there may be considerable obstruction to breathing from congested, swollen turbinates. This is apt to be a rather intermittent obstruction, usually worse at night. Sneezing is fairly common, severe paroxysms occurring in the morning. This is most common with involvement of the anterior ethmoids, especially if there is defective drainage of one or more cells.

Nasopharynx: Granulations on the pharyngeal wall are usually present due to the irritation of the purulent discharge. It is these areas which account for so many sore throats and coughs present after removal of the tonsils.

Larynx: Irritation of the larynx with chronic laryngitis and irritation of the lingual adenoid region are very common.

Bronchi: An associated bronchitis is often present, but many cases have severe spasmodic cough. This is especially common with cases which have pharyngeal or lingual adenoid irritation from the postnasal drip. Irritation from the sinuses themselves can cause a reflex cough which is often troublesome. It is surprising to see the

number of cases with cough diagnosed as various pulmonary conditions which are quickly relieved by appropriate care of the sinuses. Some cases of asthma follow long standing sinus conditions, particularly those associated with much polyp formation. Pneumonia may be secondary to an infection of the sinuses.

Eyes: Some amount of muscular asthenia is often present, and the pain from a sphenoid is often described as being back of the eye. Patients frequently complain of soreness of the eyeballs.

Digestive Disturbance: Loss of appetite and indigestion, sometimes with nausea and vomiting, may be due to swallowing considerable quantities of pus.

Headache: This is one of the most common symptoms of chronic sinusitis and accounts for the major portion of head neuralgias. Its localization is variable. Over the frontal it may be due to infection of the frontal, or pain from the sphenoid may be transmitted to this region through the ophthalmic division of the trigeminus. Pain over the vertex usually denotes ethmoiditis, but in this region a feeling of fullness or pressure is more often complained of than actual pain. Pain in the occiput, back of the neck, even going down to the shoulder may be associated with disease of the ethmoid. The headache from sinusitis is usually intermittent, very often worse in the morning, being relieved as the patient goes about and drainage becomes free. This is in contradistinction to eye headaches which are usually worse in the evening. Most sinus headaches are made worse by alcoholic stimulation, and the "morning after" usually brings with it a prostrating headache. Some of the cases with severe headache have almost no discharge.

Diagnosis: This is often very difficult. A goodly number of patients however, show symptoms which are very apparent. A chronic discharge is always indicative of trouble in the sinuses, as is also a marked postnasal drip. A careful history is very important. The inquirer should seek the records of past general illnesses, such as influenza, scarlet fever, measles, and pneumonia. Repeated colds and frequent headaches at any period of life may have some bearing on the evidence. The most usual history, of course, is that of a severe head cold which did not clear up satisfactorily.

I shall not discuss the examination of the nose as I feel this is work for a competent specialist. However, anyone can carefully inspect under good light the posterior pharyngeal wall and if this shows much injection, numerous angry dilated blood vessels, a coating of tenacious mucus, or numerous granulations the evidence is very suggestive of a chronic sinusitis associated with marked retropharyngeal drip. Transillumination is of some value, particularly of the antra but is not conclusive. In transilluminating the antra the bulb is placed in the mouth and three points should be noted: (1) The red pupillary reflex; (2) the crescent of light corresponding to the position of the lower eyelid; and (3) the sense of light in the eye when closed. If the red pupillary reflex and the crescent of light are absent the antrum is probably affected. Note both sides at once for comparison. A comparison of the lower portions of the field of illumination may be very misleading, as the anterior wall of the antra varies greatly in density irrespective of the disease present. Transillumination of the frontal sinus, taken as a whole, is not a reliable procedure. Roentgen ray diagnosis should, I feel, be made only by one especially trained in this field, and I mean especially in sinus x-ray work.

Complications: I shall only mention the complications of chronic sinus disease which may be cavernous sinus thrombosis, meningitis, subdural or brain abscess, acute and chronic otitis media, ocular complications, including retro-bulbar neuritis, and osteomyelitis.

Treatment—General: The general treatment of cases of chronic sinusitis has never received sufficient attention. Patients should all be placed, as far as possible, in the best hygienic surroundings and, if possible, should have an out-of-door occupation. General tonic and vitamin treatment with good food and fresh air is of great benefit.

Local: I shall speak only in a general way as no specialized treatment can be undertaken by the general man. The first consideration will be of the drainage and ventilation of the nasal chambers. If the nose is open and the sinus region accessible one may proceed with the ordinary non-operative method of treatment. If, on the other hand, there is marked nasal obstruc-

tion it is imperative to correct this at once. A complete submucous resection of the septum may be all that is necessary, but more often with this either a partial removal or cauterization of the middle turbinate is advisable, the whole object being to get the upper part of the nose properly opened, whether this means much or little in the way of surgery.

Argyrol or neosilvol 10% introduced by gravity with the patient in an extreme opisthotonus position is sometimes of value. Gravity will carry this to the top of the nose around the openings of the ethmoidal cells and even into the frontal sinus. Far superior to this is the specialized office procedure of inserting cotton packs of colloidal silver after the method of Dowling. Ephedrine preparations judiciously used in this way are also of marked value. Suction is valuable if properly handled but can do great harm. This treatment should be persisted in daily for a period of a month to six weeks, provided, of course, there is no evidence of carious bone or marked polypoid degeneration of the sinus mucosa.

A course of treatment will often reduce a profuse purulent discharge to a scanty mucoid one and will render the patient sufficiently comfortable to accept cheerfully the little remaining inconveniences even though there is not a complete cure. Headache and the feeling of fullness in the head may also entirely disappear under this treatment.

I am purposely omitting a discussion of the minute pathology involved in any of these conditions and the detailed operative treatment as it is of no value to the general man.

Vaccines and foreign protein therapy may be of value in some cases.

The treatment of sinusitis will always, to a very great extent, remain in the hands of the specialists because of the essential detailed knowledge of anatomy, the intricacy of the procedures, the numerous special instruments required and the necessity of much skilled intranasal technic. However, the early recognition of these conditions for reference to the specialist by the family physician who is frequently first consulted will result in numerous better satisfied patients, far fewer neurasthenics and hypochondriacs and the removal of many aggravating,

so-called "chronics" from the shoulders of the general practitioners.

ALLERGY*

A BRIEF RESUME

By
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Practically within the last decade we have seen a new medical entity arise to be added to our growing diagnostic and therapeutic armamentarium. The word allergy is so new as to need defining to many medical men and almost all laymen.

Allergy is from two Greek words meaning changed or altered susceptibility but by common usage has come to be applied to the whole group of conditions of natural hypersensitivity to foreign proteins.

The recent advances in the study of allergy have shed as much light on the causes of shortness of breath, nasal catarrh, head colds, and related conditions as early discoveries in bacteriology did on the causes of fever.

Diagnoses of cardiac asthma and renal asthma, and other such terms not long discarded, demonstrate the confusion, existing until fairly recently, as to causes of shortness of breath. Such diagnoses remind one of typho-malaria and typho-pneumonia, combinations resorted to before blood tests for typhoid and malaria came into common use.

The same thing can be said of many common colds, head colds, frequently recurring chest colds, and chronic nasal catarrh. Many of these are allergic in character and, if the underlying cause is properly treated, the condition will be very greatly helped if not entirely cleared up.

Much of the sinus infection seen is secondary to allergic swelling in the nose which blocks the drainage canals. If the allergy were properly treated, the swelling would be relieved and the sinus cleared, more radical measures being unnecessary.

This seems to suggest the question of the pathology of allergy. If asthma, hay-fever, urticaria and other conditions, as some cases of migraine, are related, they must

*Read at a meeting of the Talladega County Medical Society, April 4, 1933, Talladega.

have a common cause and I believe this to be the case.

For a long time two types of mechanisms have been thought to be involved in causing the symptoms in the chest called asthma. The first was swelling of the bronchial mucous membrane and the second constriction of the circular muscle fibres in the walls of the bronchi. I believe, however, that swelling of the mucous membrane lining the passages is sufficient to explain the whole process. This can be reasoned from analogy. In the nose, for instance, where the allergic symptoms are most severe in hay-fever, the membranes are seen to be the site of a boggy, pale edema which weeps an almost clear fluid. It is not possible for muscle contraction to have any part in the production of the symptoms of hay-fever. Likewise, in the skin, the typical lesion in urticaria is a central edematous area surrounded by an area of hyperemia.

In the case of migraine, which has been accepted only recently as an allergic manifestation, localized swellings within the cranium seem to offer a more reasonable explanation of the manner of the production of the symptoms than any other type of pathology. The increase of intracranial pressure, which would be a necessary accompaniment of the swelling, could easily explain the ocular manifestations, the localized pain and the feeling of fullness in the head complained of by most of these sufferers.

Of course, so little opportunity has ever been found for examining migraine cases postmortem that the whole question of mechanism or pathology is almost pure conjecture. This is true with almost all allergic conditions. In the migraine cases the swelling might be in the dura mater or even in the brain tissue itself.

Since most of the allergic manifestations with which we are familiar are definitely localized in either the epithelial or its related mucous membrane type of tissues, we might argue, in the case of migraine, that if localized swellings do cause the symptoms, the lesion is more apt to be in the brain tissue itself than in any of its covering membranes. The brain tissue comes from the ectodermal layer of the embryo while its covering membranes come from the mesodermal layer and are all connective tissue in origin. As you no doubt re-

member, the ectodermal layer is the one from which the skin and some of the mucous membranes develop.

If one should ask what causes these localized swellings which produce the allergic symptoms, then one has us up a stump, so to speak. During the times of freedom from symptoms, the tissues of an allergic individual show no difference from those of a non-allergic person, either macroscopically or microscopically. The mystery here must be locked up in that still unexplored field of the chemistry of the proteins. Until we know more about proteins we can not know anything about their variations and the changes to which they are subject under varying conditions.

We freely admit we do not know why it is that one person's mucous membranes will swell and weep and itch when in contact with ragweed pollen; or why another should have the itchy swellings we know as urticaria when he eats egg or tomato; and why fifty or seventy-five of his neighbors are totally unaffected when in contact with these same things. That is what we call hypersensitiveness or allergy. Nor do we know why the same foreign protein may produce hay-fever in one individual, asthma in another, and urticaria or migraine in another. We know that that is the case, however.

Let us next consider the question of symptomatology and diagnosis. The frank and well developed case of asthma or hay-fever or urticaria leaves little doubt in the mind of any one seeing a patient in an attack as to what is the diagnosis. Most of these patients will come to the physician with the diagnosis made by themselves or friends. There are many borderline cases, however, which do offer quite trying problems. More and more it is being recognised that the frank and well defined cases form only a part of the whole number.

One of the first necessities of a careful diagnosis is a thorough history, particular emphasis being placed on the question of heredity. A history of any allergic manifestation in a near relative is very suggestive. It is becoming increasingly evident that heredity plays a very definite part in allergy. These people inherit some condition which makes them subject to allergy. They do not inherit either the specific type of condition or the specific sensitivity to some protein.

The parent or other relative may have asthma from exposure to cat or horse hair, while the next descendant may have hay-fever from sensitivity to Bermuda grass or even to wheat flour. It is probable that the specific sensitivity is determined by the accidents of early exposure. The inheritance seems to follow the Mendelian laws of heredity. If one parent is affected, the chances are that about half the offspring will have allergy while, if both parents are subject, it is extremely probable that all the children will be affected.

Allergic people should not marry allergics as they are certainly laying up trouble for themselves and their descendants. It is a very futile and thankless task to try to tell people how to marry but these are the facts, nevertheless. From the point of our present knowledge on allergy, the only way to stamp it out would be for allergic people to stop having children.

After a family history of allergy the next most suggestive thing is a history of chronicity. Allergy is a chronic affair and most adult allergics will give a history suggestive of allergic manifestations, probably dating back to childhood. Infantile eczema or frequent head or chest colds, usually with little or no fever, are very suggestive of an allergic state.

Infantile eczema, with onset after the beginning of artificial feeding, is almost certainly allergic in cause. There have been cases of allergic manifestations in purely breast fed infants in which it was thought the protein was encountered through the breast milk but I have always been skeptical of these. I believe in those cases the protein is encountered either by contact or by inhalation.

It has been recognised for a long time that we did not know what catarrh is. No doubt much of the chronic nasal and pharyngeal catarrh is mild allergic manifestation. A great many cases of chronic chest colds are mild asthma. I have had a number of cases of allergic conjunctivitis which have been very interesting.

In the field of symptoms we have little that is characteristic of allergy. The symptom of itching or its related symptoms of burning or stinging sensations are very suggestive. Allergics complain that their noses itch or that their eyes itch or burn; many

asthmatics state that they have itching of the throat or chest. A patient I had not long ago, who had both asthma and urticaria, said she felt like she had the same itchy eruption in her bronchial passages that she had on her skin. This, I thought, was a very shrewd observation.

Shortness of breath or dyspnea is the next most common symptom seen in allergy. The dyspnea is limited almost entirely to the period of acute symptoms and rapidly disappears as the chest or pharynx clears up from an attack. The text-books used to put a good deal of emphasis on expiratory type of dyspnea but most of the patients I see are just short of breath and do not differentiate between trouble in getting the air in and getting it out. Many hay-fever cases have some dyspnea; and, of course, a majority of the cases will develop definite asthma if the disease is allowed to run on untreated.

Sneezing, while a common symptom in hay-fever, can not be said to be any more characteristic than the other symptoms mentioned. When present it is frequently more violent and more prolonged. I see many allergic rhinitis cases, however, in whom sneezing is only a minor symptom, if present at all.

As regards physical signs or the objective things which we as physicians can determine, there are several things which are rather distinctive. In the first place we are all familiar with the urticaria which is very characteristic.

The pale boggy character of the swelling in the nasal mucosa is fairly characteristic also, while in the chest the type of rales is very suggestive. In tuberculosis the fine crepitant or subcrepitant rales are found localised in one or both upper lobes and in small areas in these lobes. The moist rales of bronchitis may be more generalized but have a definite tendency to attack the lower lobes and may be limited to one side. In true allergic asthma, however, the rales are very different from either of these. The loud sonorous and sibilant rales of asthma are heard in both phases of respiration and are heard all over the chest.

Of course, with rales as loud as those of asthma, there is always the possibility of transmission from one part of the chest to another but in most cases the impression is

gained that the rales originate in all parts of both lungs. Occasionally, as an attack clears up, there will be a tendency for the lower lobes to clear up last but in the vast majority of cases the rales are heard in all parts of the chest. Whenever moist rales occur in asthma there is a superimposed infection or bronchitis. In any case where the predominant character of the rales is dry, sonorous or sibilant sounds, heard in both phases of respiration, the chances are very much in favor of allergy as the cause of trouble.

The final criterion on which the diagnosis of allergy is based is, of course, the protein sensitization tests. In the presence of positive protein tests, the presence of allergy is practically assured. Of course I do not mean that every ill from which an allergic individual suffers is allergy, any more than that every ill from which a person suffers who has a positive Wassermann test is syphilis.

The protein tests, usually called skin tests, are made in several ways. The test materials may be applied to scratches on the skin. They may be injected into the skin with a small hypodermic needle, or the solutions or the raw materials may be applied to the mucous membrane of the nose or eye directly. The skin tests are the ones most frequently used and they are the most widely applicable. A large number of skin tests can be made at one time, whereas by the ophthalmic method of testing or the nasal mucosal route only one or two tests can be made at a time. Since there is such a large number of tests to be made on each case, the skin method is the only one of practical value except in the occasional instance where some particular protein is suspected which does not give a skin reaction.

The actual number of tests to be made on any given patient varies with the type of case. In typical seasonal hay-fever only one or two dozen tests need be made; in some patients less will suffice. For instance, one whose symptoms are limited to the period from August 20th until frost is almost certainly sensitive to ragweed and need be tested for a few other pollens. The tree season is limited to about six weeks in April and May while the grass season is from the latter part of May until frost.

In those sufferers who have symptoms throughout the year the whole series of

from a hundred and fifty to two hundred tests should be made. These constitute the great majority of cases. Many patients, who say their symptoms are limited to one of the above mentioned seasons, when questioned closely, will be found to have milder manifestations at other periods.

I have had a few patients who felt that I had converted their trouble from a seasonal one to a continuing one. On questioning it was found that they paid little attention to the milder perennial symptoms as long as the severe seasonal attacks were in evidence. After being relieved of the severe attacks the milder perennial trouble began to register on consciousness. The vast majority of allergic individuals have spells at any and all seasons of the year.

As regards the choice of methods of testing, some men use the intradermal method exclusively while others use a combination of the intradermal and the scratch methods. Each has its own peculiar advantages and the combination of the two allows one to profit by the advantage of each.

The scratch method is less dangerous as few if any constitutional reactions are ever gotten. At the same time it is much less dependable than the intradermal since many more reactions will be gotten by the latter. The scratch method is less painful and also less terrifying to some people who dislike the sight of the hypodermic needle.

I use a combination of both. I put on all the tests by the scratch method first. This serves as a guide to the intradermal tests since one can safely apply much stronger intradermal tests if the scratch is negative. If the scratch test is positive the size of the wheal serves as a guide to the dilution of the intradermal solution to be used.

Finally, as regards treatment, having made the tests and found to what proteins the patient is sensitive, there are several methods which offer help. First, let us take up those directed toward handling the specific sensitization. There are two ways of doing this. First is avoidance of contact with the offending proteins and second is specific desensitization toward that protein or proteins.

The methods of avoiding contact with the offending proteins are most universally applicable. Let us take up some of the more common offenders which may be handled in this way. House dust is one of the most

common reactors and of course one of the most constantly encountered by patients.

No one knows what house dust is beyond the fact that it is a general mixture of all the varied things encountered in habitations. It is made up of the lint and dust from carpets, rugs, mattresses, bedding, face powder, animal hair in homes where there are pets, molds and fungi and other things which shed lint or powder. Since no chemical methods have ever been perfected for identifying different proteins it is not possible to analyze house dust for its ingredients.

In most homes the bedroom of the patient is about the only part of the house which can be kept free of house dust, even approximately. Looking to that end, it is advisable to remove all carpets and rugs from the floors, all curtains and draperies from windows and walls and any bedding which contains feathers,—feather pillows or mattresses or comforters. The floor should be varnished or covered completely with linoleum and the room cleaned every day with a wet or oiled cloth. No dry dusting or sweeping should be allowed in any part of the house. One or two small washable rugs may be allowed at the bedside but these should be washed frequently.

Feather pillows, or other feather bedding, are probably the next most common cause of allergic disturbances. Those who react to feathers should dispense with all feather pillows and anything else containing feathers. It is not sufficient merely to lay the pillows on a chair at night; in many instances it is not even sufficient to put them in another room. As for the old fashioned feather bed or feather mattress they should hardly be tolerated, even in the neighborhood of an asthmatic and much less in the house. All feather pillows and mattresses should be replaced by those stuffed with kapok or cotton. Of course, those sensitive to feathers should not have any contact with live fowls or birds.

Domestic animals, especially cats, are frequent causes of trouble. It is an excellent rule for allergic individuals to avoid contact with all animals. If they are not already sensitive they may become so by repeated contact. I find that the domestic animal problem is a difficult one to handle in many cases as people are inclined to hold onto their pets tenaciously. People will

make use of every possible excuse for retaining them.

Cosmetic powders offer a knotty problem in those sensitive to orris root. Even though the patient may readily do away with her own powders every woman with whom she comes in contact is a possible source of trouble. There are several brands of cosmetics now on the market for allergic individuals. These are made of coal tar products and have no organic matter in them. They are very helpful in treating women sensitive to orris root.

Flaxseed is a common reactor and the chief source of contact is the beauty parlor where the sticky flaxseed solution is used to set the waves in hair. Of course, flaxseed meal for poultices and linseed oil, used in the paint trade, are sources of possible contact which should be avoided by those sensitive.

Cottonseed is a reactor whose source of contact is not often appreciated. In my personal experience cottonseed oil used as food is the most probable source of trouble. Wesson's oil and most of the oleomargarines are cottonseed oil. No doubt a certain amount of the protein is dissolved in the oil. In some cases cottonseed meal has seemed to be the chief exposure. On the other hand cotton used in mattresses is not apt to be the cause of trouble as the cotton fibre seems about as free of protein as any organic matter known.

While any of the foods may be the cause of allergic reactions, milk, wheat and egg are by far the most common. After making many tests we find that the three named, and probably in the order given, are the most common. Tomato, strawberry and orange, while more commonly thought of, are secondary in importance to the first three. Probably corn, oat and rye, the other cereal grains, are almost as common reactors as wheat. It is much easier to tell one to leave a particular article out of one's diet than it is to actually do it. This is particularly true of milk, wheat and egg as these are used in cooking many other foods and often are ingredients when not suspected. For instance, some brands of baking powder contain both wheat and egg. Almost all breads are made with milk and eggs.

This is a short resume of the most common allergens from which one may get a

certain amount of relief by merely avoiding all possible contact. Sometimes, however, it is impracticable to attempt to avoid contact. Such is true of the pollens. There are three main pollen seasons. From early April to mid-May the trees pollinate. Any given tree rarely pollinates longer than four or five weeks. The tree pollen cases are comparatively few. I find that in my section hickory is the most common tree cause, followed in frequency probably by oak, elm and black walnut.

The next pollen season is that of the grasses and extends from early June until frost. Last and most common as the cause of hay-fever, and some cases of seasonal asthma, is the ragweed which pollinates from about August 20th until frost.

The wind pollinated plants just enumerated are so widely distributed and the pollen season so long that avoidance of contact by a long trip or an ocean voyage each year is out of the question. We are limited in these cases to immunizing treatments. As a matter of fact practically all allergic cases require immunizing treatment for the fullest possible results.

In the case of pollens the immunizing treatment is given preferably before the onset of the season. It is best started from six to ten weeks in advance and doses are given by hypodermic at two to five day intervals, increasing as rapidly as possible in order to stimulate the greatest possible immunity by the onset of the pollinating season. Once having reached the maximum dose the treatment can be carried on through the year by giving a dose every three or four weeks. This so-called perennial treatment has many advantages but if not feasible in any given case the preseasonal treatment should be given over several seasons at least. The pollen cases which do not come until after the onset of trouble get a good deal of relief from small doses of the offending pollen given daily or every second day.

It is rarely necessary to treat for the non-wind borne pollens (flowers and corn pollen). These pollens are rare causes of trouble but one at least, rose, is a cause of severe trouble in occasional cases. It is usually sufficient to cut down the rose garden or stay away from it during the blooming season.

In the case of the other allergens the im-

munizing treatment is begun at any convenient time. Doses are given at intervals of three to seven days and the treatment continued until the fullest possible degree of immunization is reached. This procedure requires from three months to a year, about six months being the average.

As regards the choice of allergens to use in treatment, a few words will not be amiss. In the first place some workers seem to be worried over cases of multiple sensitization. As a matter of fact practically all cases fall into this category. The broader we make our investigation the more certain does this fact impress itself. I believe it is much easier to see why a patient would be sensitive to a number of things than to only one.

I try to have my patients avoid contact with all reactors as far as possible and then select one or two of those most difficult to avoid and treat for them. It is rarely possible to treat for more than two allergens at once as the solutions must be kept separate to eliminate any possibility of interaction between them.

House dust, being one of the most difficult to avoid, is most often selected for administration, while feathers and animal hairs are usually most easily avoided. Orris root occasionally requires treatment for the best results. Of the foods, milk, egg and wheat are used for immunizing treatment but few if any other foods are thus used.

Bacterial vaccines are of some value in occasional cases of allergy. My feeling is that when infection occurs in allergic cases it is implanted on mucous membranes already inflamed by exposure to the allergens to which the patient is sensitive. As a consequence the infection with germs or bacteria is secondary to the allergic process. The vaccine, by helping clear up the infection, may aid recovery. Autogenous vaccines are much to be preferred to stock mixtures.

There are various non-specific measures which are of benefit. Adrenalin chloride, 1:1,000 solution, given hypodermically gives temporary relief to almost all cases. The newer ephedrine sulphate or hydrochloride, given either in solution or in capsule, is very helpful in many cases. It has the advantage of oral administration but is not so universally helpful as adrenalin. A mixture of ephedrine and amytal is a good com-

bination as the amytal counteracts the nerve stimulating effect which the ephedrine exhibits in some instances.

Potassium iodide is beneficial to many asthmatics. Ten or fifteen drops of a saturated solution three times daily will help clear up old cases when they have a tendency to drag on in spite of treatment. A few drops of tincture of belladonna with the potassium iodide help some cases more than does the potassium iodide alone.

I rarely give an asthmatic morphine as the dangers of habituation are too great to risk in such a chronic affair as allergy. Morphine, of course, gives more relief temporarily than any other drug. In occasional severe spells it is a life saving agent but in the common run of allergic attacks its use can not be too strongly condemned. With adrenalin, ephedrine, belladonna, potassium iodide and the various smoking mixtures, most of which contain stramonium leaves and belladonna leaves, there is no excuse for the use of morphine in any but the very rarest instances.

INFANT CARE AND FEEDING*

By
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The care of an infant begins before its birth. It is generally recognized that proper prenatal care is essential, not only for the mother but for the baby. A child has the right to be born of parents who are free from diseases which may be transmitted to it. All of us have seen children who should never have been born. Society has long recognized the importance of a good hereditary background. However, this is most difficult to control. In taking care of a child, it is important to get a complete family history in order that one may determine certain family characteristics.

The most important part of a child's life is its first year. At no other time is there such a rate of growth. The welfare of the individual in later life, both physical and mental, is influenced markedly by what takes place during this period. Every effort should be made to detect any factor which may interfere with normal growth and development. However, the most im-

portant feature in taking care of an infant is to see that a proper nutritional status is maintained. A child suffering from malnutrition is susceptible to all types of infections. Some one has aptly said:

"Nourish the sapling to make strong the tree
What the child is the man will be".

The first step in caring for an infant is a careful examination, as soon as is practicable after delivery, looking especially for congenital defects. The doctor should find them, not the parents. Birth injuries should be considered a possibility in all cases, and especially after long labors, the use of forceps, and rapid deliveries. Head injuries should be diagnosed early. Refusal to nurse and continuous crying are the paramount symptoms. In all suspicious cases the coagulation and bleeding time should be noted. If delayed an injection of whole blood from mother or father should be given immediately. The test for bleeding time and coagulation time is simple, and is done by making a stab puncture in the heel, noting the length of time it bleeds and the length of time for coagulation. I shall not mention many of the congenital defects, but call attention to a few things which can be corrected at once and which will add to the comfort and well being of the infant.

1—Tongue tie: If sufficient to interfere with nursing, clip near the gum to avoid bleeding.

2—Adherent prepuce: This frequently found condition can be relieved by dilating the prepuce and separating the adherent parts. If this is done nature performs the circumcision and the patient is spared the expense of an operation.

3—Separation of muscle at umbilicus: Strap with adhesive and keep strapped for several weeks.

4—Hypertrophic pyloric stenosis: Hypertrophic pyloric stenosis and pyloric spasm often have to be differentiated early. The classical symptoms of stenosis are familiar to all; however, the symptoms depend upon the degree of the stenosis. Spasm frequently gives rise to symptoms that closely resemble those of stenosis. Indeed, a mild type of stenosis and spasm may exist at the same time. Before resorting to operation, atropine sulphate with thick cereal feeding should be given a thorough trial.

*Read at a meeting of the Lee County Medical Society, Opelika.

Haas of New York believes that atropine will often bring about a cure in stenosis.

After the examination the mother should be told how to care for the baby. A little time, careful thought, and tactful handling during the first ten days often mean successful nursing. In no other branch of medicine does attention to detail bring more beneficial and happy results. Nothing should be considered too simple. The mother should be told what clothes the baby should wear, when it should nurse, how much it should sleep, the number of stools to expect, the average weekly gain, when to expect teeth, and when the baby should sit up, walk and begin to talk. When we realize that the lack of certain internal secretions is often determined by the history alone, and that the diagnosis of such conditions must be made early if treatment is to bring results, we see the importance of giving minute and detailed instructions.

INFANT FEEDING

The first work published on infant feeding was by Bagellardus in 1487, entitled "*Aegritudinibus Infantum*". The first in English was by Thomas Faier in 1567, entitled "*The Regimen of Life*". Up to the eighteenth century, the wet nurse was the only source of food for a baby whose mother could not nurse it. It was finally considered safe to give water pap as soon as the first tooth appeared. Cow's milk was still objected to. Up to this time all kinds of concoctions were tried and discarded, among them being ass's milk. John Armstrong in an "*Account of Diseases Most Incident to Children*" (London 1783) recommended that the nursing child take, in addition to the breast, pap or panada made from bread crumbs boiled in water and sweetened with sugar. He added that if the child had been artificially fed from the start, it should have cow's milk mixed with its victuals as often as possible, and then a little of it to drink alone. "Ass's milk will be still better". John Clark of London, in 1815, advocated cream diluted with starchy concoctions. Dewees in 1832 recognized the importance of heating milk but advised against prolonged heating. In 1860, the New York Medical College organized a clinic for diseases of children, and here, under Abraham Jacobi, advances in infant feeding were made which placed infant feeding

on a scientific basis. The only perfect food is mother's milk. All of us have been guilty of giving artificial foods on the slightest provocation, when we really should have exerted more effort to make the mother produce milk. The only contraindications to breast feeding are the following:

- 1—Repeated loss of or stationary weight, with severe digestive disturbances of the infant.
- 2—Tuberculosis in any form.
- 3—Unsuccessful nursing on two previous trials.
- 4—Puerperal convulsions.
- 5—Chronic disease of the mother,—heart, kidney, etc.
- 6—Acute infectious diseases of the mother.
- 7—Severe neurosis.
- 8—Severe mastitis.

Successful nursing may be said to obtain under the following conditions:

- 1—Gain of six to eight ounces per week for the first six months, and three to four for the second six months.
- 2—One to three good stools per day.
- 3—The baby does not fret during or immediately after nursing and does not nurse too long.
- 4—The baby goes to sleep while nursing or immediately afterwards and sleeps sufficiently.

When nursing is not successful, some form of artificial feeding becomes necessary. The needs of each baby will determine the type feeding to be used. Frequently complementary feeding is indicated, especially during the first few weeks. Mothers who have had trouble during the period of pregnancy, and who may have had difficult labors, will probably need help until their physical condition improves. I have felt that some form of dried milk is best to use in this type of case, since one is practically certain it is sterile. To me, the baby who is receiving only part of its nutritional requirements from its mother, the other being supplied by complementary feeding, is quite a problem, since it is as easy to underfeed as it is to overfeed. To solve the problem satisfactorily the doctor must have the baby under constant observation.

In babies past two or three months of age requiring artificial feeding, I have used

modified cow's milk to the best advantage, and have used what is called "simplified infant feeding", as outlined by Dr. Dennett of New York. This method is based on the caloric requirements of the particular child to be fed. He has laid down the following rules, which may be easily memorized:

1—Well baby under four months of age or moderately thin baby needs from 50 to 55 calories per pound of body weight per day.

2—Well baby over four months of age needs from 40 to 45 calories per pound of body weight per day.

3—Emaciated baby of any age needs from 60 to 65 calories per pound of body weight per day.

4—Do not feed babies under three months of age over half milk and half water.

5—Sugar requirements: Baby under 10 pounds needs 1 ounce per day; over 10 pounds needs $1\frac{1}{2}$ ounces.

6—Give one to three ounces per feeding more than the age of the child in months.

Exceptions: Get babies one or two months of age up to 3 or 4 ounces per feeding, as soon as possible, and never feed to any baby over 8 ounces at a time.

Cow's milk has a caloric value of 20 calories per ounce. Dextri-Maltose, commonly used, has 120 calories per ounce. As an example let us say that we have a well baby four months of age weighing 14 pounds. According to the rule, he should have 45 calories per pound per day, or 630 calories. Sugar requirement will be $1\frac{1}{2}$ ounces—that is, 180 calories. Then deduct this from the 630 calories needed for the day and this leaves 450 calories to be supplied from the milk. 450 divided by 20 calories makes $22\frac{1}{2}$ ounces of milk needed. The baby will probably take 7 ounces at each feeding and five feedings will be needed or a total of 35 ounces. This will leave $12\frac{1}{2}$ ounces of water to be added and your formula will be:—

$22\frac{1}{2}$ ounces of cow's milk

$12\frac{1}{2}$ ounces of water

$1\frac{1}{2}$ ounces of Dextri-Maltose.

Divide into five feedings of 7 ounces each and feed every four hours.

This method can be used for any type of infant food if one knows the number of cal-

ories per ounce of the food to be used. Cow's milk for the formula should be boiled three minutes, which does not destroy the vitamin content but may destroy pathogenic bacteria. It also breaks up the curds, causing them to be more easily digested.

Dr. Marriott of St. Louis has worked out a method of concentrated feeding. He does not dilute the milk, but uses lactic acid, a dram to the pint of milk, using Karo syrup for the sugar. It has the advantage of giving high caloric value, using small quantities at a feeding. I have found the canned lactic acid milk to be very satisfactory and much less trouble to prepare.

Breast fed babies should be given at least one substitute feeding at about the fifth month. This not only gives the mother more freedom but helps when weaning becomes necessary. Cereals, gruels, vegetables, juices, etc., should be started about the 6th or 7th month. Orange juice may earlier be given. Breast babies should be weaned before the twelfth month. Circumstances make it inadvisable to state the exact age for weaning a baby.

Bottle babies should be given whole milk by the tenth or eleventh month, and should be taught to drink from a cup as soon as possible. Orange juice and cod liver oil should be given to all bottle babies and should be started early in order to supply the necessary vitamins. Bottle babies should also be put on soft diet at a relatively earlier age than the breast baby, who is receiving ample food from the mother. It seems simple to estimate the nutritional needs of a baby, and, if it were not for the disturbances brought about by infections and hypersensitiveness (allergy), all babies could be put on a standard formula and would thrive. Of course, there are a small number who cannot digest and metabolize the usual amount of certain foods, notably fat. When a child fails to gain on a rational formula, one should look for infections. Lack of appetite, vomiting, and diarrhea are usually from infection, often in the upper respiratory tract. Of course, when these infections arise, the formula should be varied according to the needs of each case.

CONCLUSION

The infant death rate can be lowered by proper care and correct feeding. Not only can the death rate be lowered, but the class

of patients known as neurasthenics and hypochondriacs and those with hysteria can be reduced, if proper care in infant feeding is followed by correct hygienic and dietetic measures throughout the period of childhood.

PERFORATION OF DUODENUM BY INGESTED FOREIGN BODY

REPORT OF CASE

By

EMMETT B. FRAZER, M. D., F. A. C. S.
Mobile, Alabama

When indigestible foreign material is swallowed it usually passes through the intestinal canal without causing symptoms. This is particularly true of foreign bodies with smooth edges and convex surfaces. However, when lodgment does occur, it is usually within the anal canal or the esophagus. The case history presented here is one in which the patient unknowingly swallowed a small fish bone which perforated the duodenum and was recovered at operation. The symptoms closely simulated acute cholecystitis. It is unique in our experience.

REPORT OF CASE

Male—Age 44—White. While playing bridge about ten o'clock at night he was taken ill with an acute epigastric pain, colicky in type, which was associated with nausea and vomiting. The abdomen was held somewhat rigidly, but was not board-like as is commonly seen in ruptured peptic ulcer. The area of maximum tenderness was beneath the right costal margin, but he complained of soreness, more than pain on deep pressure. The temperature was 99-1/5. The white blood count was 10,000 with 80% polymorphonuclear cells. The urinalysis was negative. The pain was so severe it was necessary to administer two doses of one-quarter grain of morphine each hypodermically at an hour interval. The next morning the nausea and vomiting had ceased, but he still complained of upper abdominal pain and soreness which radiated through to the back beneath the right scapula. There was slight right rectus rigidity and soreness on deep pressure over the gall-bladder area. The temperature had risen to 100 degrees F. and the white blood count to 10,500. A diagnosis of acute cholecysti-

tis was made, but, as he did not appear very ill, surgical interference did not seem urgently indicated. The second morning, however, there was slight abdominal distention, the temperature had risen to 100-4/5 and the white blood count had increased to 11,500 with 84% polymorphonuclear leucocytes. Right rectus rigidity was marked and there was increase of tenderness on pressure, both in the right hypochondrium and over McBurney's point.

That same morning, August 14, 1933, he was admitted to Providence Infirmary. The abdomen was opened through a mid-right rectus incision. There was a small amount of pearly gray peritoneal fluid present. The appendix was explored first and found to be normal in appearance. Its mesentery was free and it was removed without difficulty by the usual method. The gall-bladder was next explored and seemed entirely normal to palpation. As the hand was passed over the pylorus and the first portion of the duodenum, a sharp foreign body penetrated the glove. It was held between the thumb and forefinger and removed with forceps. It was found to be one of the dorsal fin bones of a small fish, sharp as a needle on the point. It was bile stained. No attempt was made to suture the wound in the abdomen. A Penrose drain without gauze was introduced to a point near the perforation and the abdominal wound then closed. During convalescence moderate degree of wound infection occurred. However, after the application of continuous hot, wet, saline dressings, this entirely cleared up in a few days and he was dismissed from the Infirmary on the fifteenth day. When examined three months later, there was no evidence of herniation and he stated that he had been in excellent health.

Soon after operation, when told of the findings, he remembered having eaten fish and corn bread for breakfast the day he became ill but was not conscious of having swallowed any bones.

PRECONVENTION MEETING

TUSCALOOSA

APRIL 16

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FAT EMBOLISM COMPLICATING FRACTURES

Fat embolism is a rare complication of fractures which has been demonstrated from time to time in postmortem material. While the occurrence of fat embolism is generally accepted, the mechanism has not been satisfactorily explained.

The current belief is that in extensive fractures of long bones and in crushing injuries of cancellous bone such as sometimes occur when very atrophic bones are manipulated, a variable amount of fat is forced out of the marrow cavity and enters the veins. The difficulty with this theory is that one would expect an amount of pressure necessary to cause mobilization of the fat to result in collapse of all open veins in the vicinity. However, if the pressure is great enough to tear off the vein from its attachment to the bony wall, then the mobilized fat could be forced into the canal in the bone and out into the vein at its point of exit.

Another theory is that the fat is absorbed by the lymphatics and thrown into the blood stream in unusually large amounts. The third explanation is that some chemical change occurs in the blood or in the fat which is normally present in the blood as an emulsion of chylomicrons and causes de-

multification with the result that the chylomicrons form globules of fat which block the capillaries in various organs and especially those of the lungs. At autopsies the lungs are apt to show large amounts of fat in the capillaries, and occasionally the capillaries in the brain, kidney, and other organs may be blocked by fat. Whether or not the fat found in these capillaries is the cause of death is still a moot question.

The symptoms arise only when a vital region of the brain is blocked or when many capillaries in the lungs are so clogged as to throw a large portion of the organs out of function. In the average case, the symptoms do not appear immediately after the injury, but come on after a period of from several hours to three days. The symptoms may be either pulmonary or cerebral in type, depending upon whether the fat collects in the lungs or in the brain.

In the pulmonary type there are signs of pulmonary edema with coarse rales in the chest, but normal resonance on percussion. There are also rapid breathing and rapid pulse with pallor which is later followed by cyanosis. In the cerebral type there may be delirium with pupillary changes, twitching, and coma. In either type the temperature may be normal, subnormal or elevated and there may be a combination of the two types, both pulmonary and cerebral.

The chief conditions from which fat embolism is to be differentiated are surgical shock, pulmonary embolism, and pneumonia. The time element is an important factor in the differentiation of the first two of these three conditions. In surgical shock the symptoms usually occur immediately after the accident, while in fat embolism the symptoms usually do not occur before twelve or more hours after. In pulmonary embolism due to thrombosis the symptoms usually appear between the tenth and the twentieth day following the accident, while in fat embolism they usually appear during the first three days. Pneumonia can usually be differentiated by the impaired resonance and signs of an acute infection. The treatment is expectant and palliative with rest and sedatives. A good many cases of the cerebral type recover after a period of delirium or even of coma which may last for several days.

H. E. C.

EXCRETION UROGRAPHY

According to Guiteras¹, efforts to devise an apparatus to illuminate the urethra and bladder were made so early as 1805. The modern cystoscope was made possible by Edison's invention of the incandescent lamp in 1879. Guiteras says that it was not until 1892 that Brenner first catheterized the ureters through a cystoscope and his lead was soon followed by a number of others. The early instruments were clumsy and progress was slow and limited largely to the great medical centers for about two decades. It has only been within the last fifteen or twenty years that cystoscopy has come into widespread use as a diagnostic and therapeutic procedure.

Until recently urograms could be obtained only by cystoscopic or retrograde urography. Several years ago intravenous or excretory urography became possible following the introduction of uroselectan. In a recent symposium Braasch² and Swick³ discuss excretory urography and compare its advantages and disadvantages with those of the older and more established method.

Braasch states that "the excretory urogram will be of greatest practical value to clinical diagnosis in (1) determining the presence of stasis in the renal pelvis or ureter; (2) aiding in interpretation of shadows in the upper part of the urinary tract; and (3) giving a fairly accurate estimate of renal function". Swick, in endeavoring to avoid the intravenous administration of uroselectan, has recently been engaged in the study of "excretion urography with particular reference to a newly developed compound, sodium ortho-iodohippurate", which is administered orally. He adds that "further investigations with the oral administration are in progress. At the present time it is my opinion that the results by the oral route will not be as consistently good as those given intravenously".

Both authors think that excretion urography, whether by intravenous or oral ad-

ministration, is as yet insufficiently employed and both consider that the future holds much in store for this procedure, especially when given by the oral route. It is also stated that the proper interpretation of the urograms is often-times difficult and uncertain, just as the visualization of the alimentary tract was difficult and uncertain only a few years ago. The improvement in alimentary tract visualization by the use of dyes has been so rapid and substantial that it is now an accepted procedure and it is thought that the perfection of excretion urography will be no less rapid and satisfactory.

Excretion urography, it seems, is practically without danger or discomfort to the patient and it appears to be especially efficacious in the diagnosis of obscure abdominal lesions, in determining the presence or absence of stasis in the renal pelvis or ureter, in the recognition of renal tumor, tuberculosis and anomaly, in the diagnosis and localization of lithiasis, in the complications of pregnancy, and in children.

Both investigators are careful to point out the limitations and disadvantages of excretion urography and stress the point that it will minimize but will never entirely supersede retrograde or cystoscopic urography. Braasch says that the data derived from excretion urography "should be complementary to other urologic data, and in only a limited field will it entirely replace them". And Swick concludes that "excretion urography has been found useful in many of the cases in which retrograde pyelography was in general indicated and in which the latter, in the presence of mechanical difficulties or infections, could not be executed; and, vice versa, retrograde pyelography is considered essential in corroborating or supplementing when the results with excretion urography are equivocal".

ANNUAL SESSION

BIRMINGHAM, APRIL 17-19

THE PROGRAM APPEARED

IN THE MARCH NUMBER

1. Guiteras, Ramon: *Urology*. D. Appleton and Co., New York and London. (1912) Vol. 1, p. 200.

2. Braasch, William F.: *The Practical Application of Excretory (Intravenous) Urography*. J. A. M. A. 101: 1848 (Dec. 9) 1933.

3. Swick, Moses: *Excretion Urography, with Particular Reference to a Newly Developed Compound, Sodium Ortho-Iodohippurate*. J. A. M. A. 101: 1853 (Dec. 9) 1933.

DEPARTMENT OF PUBLIC HEALTH

BUREAU OF LABORATORIES

James G. McAlpine, Ph. D., Director

THE VIRUS OF RABIES

The etiologic factor of rabies belongs to that rather indefinable group called filtrable viruses. Topley and Wilson¹ (1932), in discussing viruses in general, state "there is a large group of diseases affecting man, animals, insects and plants, which have most or all the characteristics of infectious diseases, yet in which no visible microscopic organism has been satisfactorily demonstrated. That these diseases are infectious is shown by the fact that it is usually possible to reproduce them in normal hosts by inoculation, not only of the ground up diseased tissue, but also of cell-free extracts or filtrates of tissue. Since these cell-free extracts are most commonly obtained by filtration, the practice has grown up of referring to the specific infecting agents contained in them as 'filtrable viruses'. . . Not all of these viruses have been shown to be filtrable, and as no exact quantitative standardization of bacterial filters has yet proved possible, the term 'filtrable' is necessarily a loose one."

Despite the fact that Proescher² (1913) has disputed the filtrability of the rabies virus, the work of di Vestea and Zagari³ (1889), and Remlinger⁴ (1904) has shown that it can pass through the ordinary filter but the results are variable. Neumann and Mironescu⁵ (1913) have demonstrated that this disparity is probably due to the method by which the infectious material is handled. If the brain—the organ ordinarily used—is ground thoroughly with normal saline solution and then shaken for one hour in a mechanical shaker, the virus passes with great regularity through the Berkefeld filter. The experiments of Remlinger⁴ (1904) have

proven that the Berkefeld No. 5 candle gives better results than Filters W and A and the Chamberland F.

The virus is present consistently in the saliva of rabid animals. Topley and Wilson¹ (1932) and Rosenau⁶ (1931) state that it has been demonstrated in this secretion 4 to 5 days before the clinical symptoms of the disease. Some other authorities claim that the saliva may be infectious 12 days before the animal exhibits any signs of rabies. For this reason all suspected animals should be confined for two weeks if they have bitten anybody. During that period, if they are infected, they will die and the proper treatment can be instituted in the persons who may have contracted the disease. That the saliva contains the virus in material amounts is shown by the experiments of Poor and Steinhardt⁷ (1913). They proved that filtering the saliva from rabid animals through Berkefeld candles gave infectious filtrates with regularity.

The etiologic factor of rabies has a special affinity for nervous tissue. Like tetanus toxin it follows the nerve trunks when it enters through the broken skin and travels to the spinal cord, medulla and brain. This, as Rosenau⁶ (1931) has pointed out, "explains the variable period of incubation, which is shorter in wounds of the face than wounds of the extremities. It also explains why the disease is more liable to occur when the wounds are in parts of the body with a rich nerve supply." In rabid animals the virus has been found in the lymph, milk, spermatic fluid, and in some of the glands. Some authorities deny its presence in the blood but the original work of Pasteur, Chamberland and Roux⁸ (1884) has definitely demonstrated its existence there. From these data it is evident that wounds

5. Neumann and Mironescu: Contribution a l'etude du filtrat du virus rabique. *Comp. rend. Soc. Biol. T.* 74 712 1913.

6. Rosenau: *Preventive Medicine and Hygiene*. New York. D. Appleton & Co. 1931.

7. Poor and Steinhardt: Two methods for obtaining a virus of rabies, freed from cells of the host and from contaminating organisms and the application of these methods to other filtrable viruses or glycerin extracts. *J. Inf. Dis.* 12 202, 1913.

8. Pasteur, Chamberland and Roux: Nouvelle communication sur la rage. *Compt. rend. Acad. Sci.* 98 457 1884.

1. Topley & Wilson: *The Principles of Bacteriology and Immunity*. New York. William Wood Company, 1932.

2. Proescher: *Zur Aetiologie der Tollwut*. *Berl. Kln. Wochschr.* 14 633, 1913.

3. di Vestea and Zagari: *Neue Untersuchungen uber die Wutkrankheit*. *Centralbl. f. Bakt.* Bd. 6 25 1889.

4. Remlinger: *Le passage due virus rabique a travers les filtres*. *Ann. Pasteur* I. 17 854 1904.

or cuts contaminated with the blood of rabid animals should be considered dangerous.

From the practical standpoint, the occurrence of the virus in milk deserves consideration because cows are frequently bitten by mad dogs and become rabid. The milk from such animals is often consumed by humans, and the question of its infectivity arises. Although, theoretically, persons can be infected in this manner, there is no thoroughly authenticated case on record. It is necessary for the virus to penetrate into the physiologic interior of the body through a cut, abrasion or wound. Hence, unless breaks are present in the mucosa of the mouth, or gastro-intestinal tract, rabies will not develop.

Although the virus of rabies is very resistant to putrefaction, it is fairly susceptible to sunlight and drying, under certain conditions. It has been found that formaldehyde is especially active against the etiologic factor. Thus, as Williams⁹ (1929) has emphasized, "it is one of the best disinfectants for contaminated material". On the other hand, the virus shows high resistance to both glycerin and phenol, making these excellent germicides for the preservation of vaccine. It is killed at 50° C. for one hour and at 60°C. for thirty minutes. Extreme cold has no effect upon it.

The fact that rabies virus is very resistant to drying at low temperatures brings another practical point into the control of the disease. Materials contaminated by the sputum of rabid animals are potentially dangerous for varying lengths of time. The following case quoted from Park and Williams¹⁰ (1924) is an example: "A child of six years came down with typical rabies in a neighborhood where there had recently been several cases of canine rabies, but no history of a bite could be obtained. The parents were sure she had not been bitten. Six weeks before, however, the child had fallen in the street and cut her cheek severely on a jagged stone. The wound was cauterized and healed without further trouble. A mad dog had been on that street just before this occurred. It is reasonable to suppose that the stone had on it some of the

sputum from that dog, and so the child was infected. Such a case would not occur very often, but the possibility should be considered."

BUREAU OF PREVENTABLE DISEASES

D. G. Gill, M. D., Director

AMEBIC DYSENTERY

The interest aroused in amebic dysentery by the Chicago outbreak is probably responsible for the increasing number of cases of this disease being recognized in Alabama; at any rate more cases are being diagnosed today than at any time in the past.

An example of this was the recent discovery of eleven cases of amebic dysentery in one small city of the State. The examination of one of these cases by the laboratory revealed typical amebae and led the physicians to examine other cases of chronic diarrhea in their practice. Within a week eleven cases of the diseases were diagnosed, many of whom had been having symptoms for some time.

This may be an unusually large number of cases for one city, or it may only represent what a careful search would reveal in other places. The laboratory diagnosis of the disease is not easy, but requires specially trained personnel. Direct examination and cultural methods are both essential. Realizing this necessity of having an expert on laboratory diagnosis, one of the technicians of the central State Laboratory spent several weeks in Chicago studying methods used there and has introduced these methods into the various branch laboratories.

At the present time a survey of a large number of persons is being carried on to determine if possible the incidence of infection within this State. Estimates made elsewhere range as high as ten per cent of the population, but no figures are available for Alabama. If the incidence of infection is high, there must be differences in the amount of pathology produced by different strains of the ameba, as was indicated by the publications of Meleney and Frye. The cases emanating from Chicago were in most instances acutely ill and it is hardly conceivable that any large number of indigent cases would go unrecognized.

Much remains to be learned concerning the disease, but physicians should be on the

9. Williams: Hydrophobia, in Nelson's Loose-Leaf Living Medicine. New York. Thomas Nelson and Sons. 1929.

10. Park and Williams: Pathogenic Microorganisms. Philadelphia, Lea and Febriger. 1924.

alert and consider the ameba in any differential diagnosis of intestinal disorders.

BUREAU OF SANITATION

G. H. Hazlehurst, Director

A RESUME OF CERTAIN CIVIL WORKS ADMINISTRATION PROJECTS IN ALABAMA

December 1, 1933 Through March 3, 1934

Early in November 1933, the Civil Works Administration was begun by order of the President as a substitute for the relief work being done under the Reconstruction Finance Corporation and the Alabama Relief Administration. This program allotted Alabama approximately 70,000 men and women to work until February 15, 1934. Some of these were assigned immediately to malaria drainage and the construction of sanitary sewers. The projects, like those of the Corporation and Administration in operation prior to institution of the Civil Works Administration, were not supervised by any particular State organization. Four engineers, formerly employed by the Bureau of Sanitation, were engaged by the Administration to make inspection of the projects; give advice to local organizations of the Administration; and report to the Administration itself the value of the individual projects from a public health point of view. These men worked only indirectly under the Bureau of Sanitation. Two regularly employed engineers were detailed to the State Civil Works Administration as advisers.

By the middle of November the State Department of Health had begun to supervise actively the projects, through arrangements made by the United States Public Health Service with the Civil Works Administration in Washington to carry on several Federal projects in the various states under the direction of their respective departments of health. The Federal projects of most concern to the Bureau of Sanitation were those having to do with control of malaria and the sanitation of communities. Personnel of the Bureau connected with this type of work consisted, at the time, of a director, three assistant engineers and a clerk.

These two projects carried some 3,988 skilled and unskilled laborers, two assistant

state directors, twelve district supervisors, and seventy-six county supervisors, besides several thousand men already at work on similar projects, now to be supervised by the Health Department. It was decided by the Bureau to combine these two projects, thereby permitting closer supervision of work and a reduction of travel expense.

Obviously, the direction of so large a field force could not be handled by the regularly employed office personnel. An appeal for additional assistants was therefore filed with the State Civil Works Administration, the result being an increase in the clerical force of eleven clerks, a chief clerk, and a draftsman. One of the district supervisors was used as an assistant engineer in the central office.

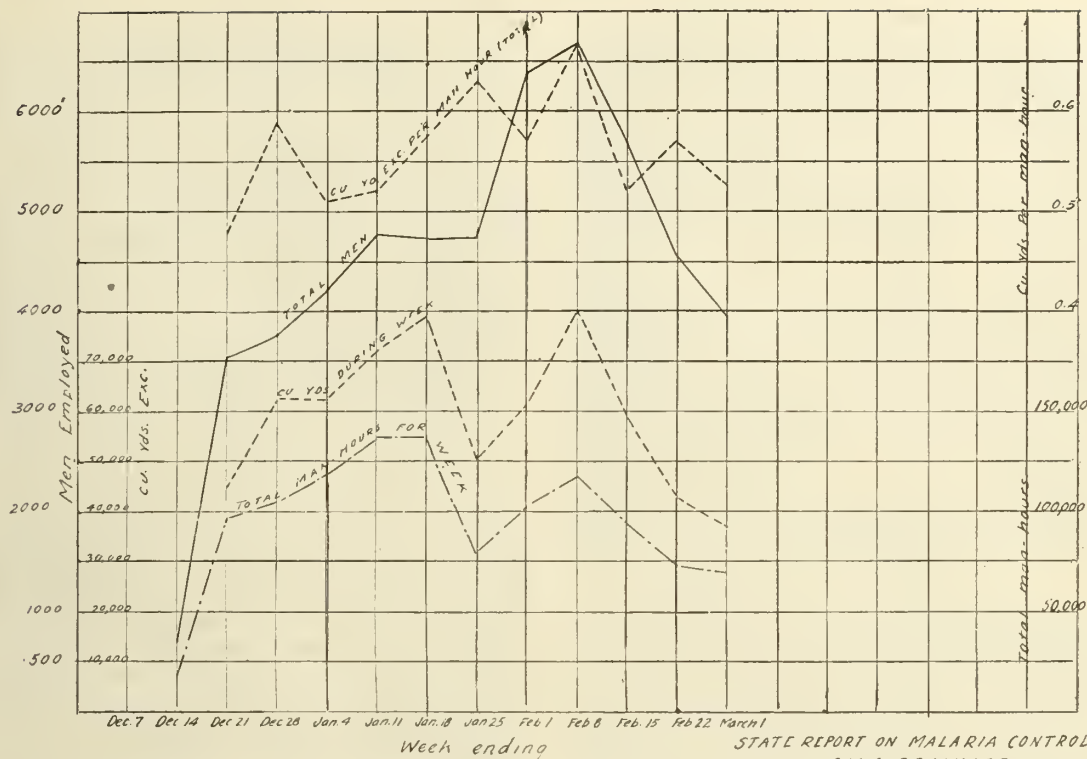
To organize the field force as expeditiously as possible, the State was divided first into two main divisions, with an assistant director responsible for the work in each. Further, the counties were grouped in fourteen districts, these varying in size from three to seven counties. Counties with a large malaria problem were then furnished two supervisors. Five counties whose quota allotment was too small to justify the employment of such personnel were given none. Each of the others was given one supervisor.

In selecting this supervisory personnel every effort was made to secure graduate engineers; or, at least, men with sufficient engineering experience to permit them to qualify as engineers. Considering the short time available for the selection of these ninety-four men, very few unsatisfactory ones were employed; and these were promptly replaced.

THE MALARIA CONTROL PROJECT

In beginning construction work, the malaria project was started first since it required less skilled supervision than other projects. In many counties some drainage was already being done under the direction of the county engineers of the Civil Works Administration. The expanded project actually began about December 5, county by county as rapidly as the district men were able to organize them.

The malaria project had 2,475 skilled and unskilled men who were distributed among the various counties according to (1) population and relief need, and (2) malaria



STATE REPORT ON MALARIA CONTROL
C. W. A. DRAINAGE
FEDERAL, T. V. A. & C. W. A. QUOTA
ALA.
STATE HEALTH DEPARTMENT
A-523

death rate. The amount of work done under the set-up and supervisory organization increased rapidly from week to week as shown by the accompanying graph.

THE SANITATION PROJECT

The sanitation project was considerably delayed inasmuch as the State Health Department was desirous of using the quota of 1513 men first on the construction of rural school privies. Looking to such end, approval was sought of the Washington office of the Civil Works Administration for the purchase of necessary material. Approval given on January 2, 1934 allowed about 25 per cent of the material needed, whereupon work was instituted. On completion of the school program in a county any sanitation deemed necessary at dairies was to be done next, followed by the sanitation of private homes.

In accordance with previous sanitation programs in the State only standard construction was considered under the project. This necessitated training in privy construction for practically all of the field men. Even with this hindrance and that pre-

sented by the economic situation, the program progressed faster and more work was done than was at first anticipated by members of the Bureau.

On January 19, an order came from Washington instructing the Civil Works Administration to place no more new men on the payroll. This materially affected the sanitation program since some of the counties had not released their quotas by that date. Further, the Tennessee Valley Authority had been delayed in its organization in Alabama; as a consequence three of the districts had no supervisors until January 10. This delay was overcome somewhat through the aid of the State Civil Works Administration in permitting men to be drawn from other projects to fill the quotas not yet released.

The two programs again began to show increasing results, even though the total number of man-hours had been reduced by the scale of 15 hours in rural counties and 24 hours in urban counties.

February 15 was the day originally set for all Civil Works Administration work to

terminate. Congress, however, made new appropriations on February 12 for continuation of the program until May 1, 1934.

When the new appropriation was made it was decided to discontinue all Federal projects. The State Civil Works Administration, however, decided to continue the projects as they stood under one combined program.

The Government, desiring to abolish the Civil Works Administration by March 30, began on February 15 to make drastic reductions in the number of men employed. As a consequence, the program was greatly reduced along with other Administration projects.

The following is a summary of work accomplished and under construction through the week ending February 27, 1934.

PROGRESS IN MALARIA CONTROL

The malaria control part of the program shows the greatest amount of work accomplished. This may be explained in several ways. First, considerable drainage was under construction before the department gave direct supervision to all malaria control projects; second, the Federal project on malaria control was started several weeks in advance of the sanitation program; and third, this type of work in most cases required no material to be furnished other than tools.

In this twelve weeks of the Civil Works Administration program, 188 malaria projects were completed. These were distributed in 66 of the 67 counties of the State. To complete these projects it was necessary to move 714,256 cubic yards of earth; further, a little over two million man-hours of labor were required. This last figure, however, includes all labor on the projects, such as that used in clearing, grubbing, etc. Considering the type of labor used, the figure of approximately $\frac{1}{2}$ cubic yard per man-hour for this work may be considered a very good return on the money spent. These 188 projects are estimated to benefit approximately 330,000 people and to eliminate 50,000 acres of land which afforded a breeding place for the *A. quadrimaculatus* mosquito. The completed projects are ditches that vary in length from a few hundred feet to several miles and have a total length of 1,387,698 feet or approximately 260 miles.

SUMMARY

MALARIA CONTROL DRAINAGE C. W. A. WORK IN ALABAMA

December 1, 1933-March 1, 1934

(1) Total no. of counties having done drainage either by Federal, S-200, C. W. A., or T. V. A.....	66
(2) Total no. of completed projects.....	188
(3) Total no. of projects under construction	144
(4) Total no. of projects considered.....	332
(5) Population benefited	350,805
Area to be drained in acres.....	50,943
Total number of man-hours.....	2,149,780
Length of ditch in miles completed.....	260
Cubic yards Excavated.....	714,256
(6) Cubic yards per man-hour including skilled and unskilled.....	0.56

PROGRESS IN SANITATION

Had the Civil Works Administration program continued until May 1, 1934 on the basis as originally planned, it would be difficult to estimate the amount of sanitation that could have been completed. But even with all obstacles considered, more work was accomplished, for the amount of labor available, than was anticipated.

On February 27th the sanitation program was being carried on in 42 counties. A total of 1827 privies had been constructed, of which 1,111 were of the wooden type and 716 of the concrete type. Of this number approximately 250 in rural schools.

SEALING ABANDONED COAL MINES FOR PROTECTION OF WATER SUPPLIES

In addition to the above projects, the Federal project for the closing of abandoned coal mines was also placed under the direction of the Bureau. This project was released on December 19, 1933 and extended until March 1, 1934. It was intended that the program should become operative in Walker, Jefferson, Tuscaloosa, Winston, Marion, Bibb, Blount and Cullman Counties, but the general stop order, issued by the Civil Works Administration on January 19th, prevented the program from beginning in Marion and Cullman Counties. The personnel included in this project was 490 persons, which included an assistant director, one supervisor, one chemist, one clerk, 44 skilled men, and 442 unskilled men. Distribution of the laborers was accomplished in accordance with the number of mines abandoned in the county.

The purpose of the mine sealing program was to decrease the drainage of acid wastes from the mines into streams now being used

as a source of water supply, and likewise into streams that may serve this purpose in the future. Acid wastes not only menace water supplies but decompose organic matter, this causing unpleasant tastes and objectionable odors. Alabama streams have not at this date been affected to any great extent by wastes, but with extensive coal mining operation and the exploration and development of high sulphur coals, this will in time become a serious problem. This source of detrimental drainage should be considered along with industrial waste in the coal mining areas.

The method employed to decrease acid mine drainage consisted of excluding air from abandoned mines by means of sealing. The oxygen in sealed mine areas gradually depletes, and with its depletion the oxidation of pyrites contained in the coal seams and shales adjacent to it ceases. These seals do not stop the drainage of mine waters, as inverted syphons and dams were used in connection with the stoppings to allow free drainage. The seals generally used in this program were plastered rock, clay brattices and rock earth fills.

Sampling points were established in several localities and tests made weekly, but due to the short period of time these did not show a marked decrease in acidity.

During the program the number of openings sealed was 2,927. This includes pitmouths, air shafts and caves. It is estimated that the number is about thirty-five per cent of the drift mines in Alabama. It does not include wagon mines.

SUMMARY

SEALING OF ABANDONED MINES IN ALABAMA

Dec. 19, 1933-Feb. 15, 1934

Labor

- (1) Total number man-days for supervision force 321
- (2) Total number man-hours skilled 9,749
- (3) Total number man-hours unskilled 69,257

Mine Closing

- (1) Name of watersheds where work was carried on—Warrior and Cahaba
 - (2) Openings closed
 - (a) Filled pitmouths 1,842
 - (b) Airshafts 527
 - (c) Brattices 483
 - (d) Brattices with trap or dam 75
- Total openings closed 2,927

G. M. T.

CURRENT STATISTICS *PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA

	January	Feb.	Estimated Expectancy February
Typhoid	23	11	40
Typhus	27	30	2
Malaria	75	55	45
Smallpox	3	2	23
Measles	813	1903	385
Scarlet fever	104	96	82
Whooping cough	226	481	115
Diphtheria	137	105	114
Influenza	392	856	898
Mumps	32	56	101
Poliomyelitis	3	1	3
Encephalitis	3	5	3
Chickenpox	189	223	211
Tetanus	7	4	3
Tuberculosis	185	328	308
Pellagra	8	11	15
Meningitis	4	4	6
Pneumonia	328	547	584
Syphilis (private cases)	144	219	135
Chancroid (private cases)	0	7	7
Gonorrhea (private cases)	154	197	151
Ophthalmia neonatorum	1	0	2
Trachoma	2	0	1
Tularemia	0	3	1
Undulant fever	2	2	1
Dengue	0	0	0
Amebic dysentery	2	4	0
Rabies—human cases	0	0	0
Positive animal heads	103	72	

*As reported by physicians and including deaths not reported as cases.

The Estimated Expectancy represents the median incidence of the past nine years.

PROVISIONAL MORTALITY STATISTICS Alabama, January 1934

CAUSES	Number of Deaths Registered Jan. 1934			Annual Rate per 100,000 Population		
	White	Colored	Total	Jan. 1934	Jan. 1933	Jan. 1932
ALL CAUSES	1199	1014	2213	940.7	884.2	931.2
Typhoid fever		2	2	0.8	1.3	5.2
Typhus fever		1	1	0.4	0.4	
Smallpox						0.4
Measles	5	3	8	3.4		
Scarlet fever	1		1	0.4		1.3
Whooping cough	11	11	22	9.3	5.6	4.8
Diphtheria	12	3	15	6.4	3.9	7.8
Influenza	55	42	97	41.2	89.8	40.5
Pneumonia, all forms	145	105	250	106.3	62.3	88.8
Poliomyelitis		1	1	0.4		
Tetanus	2		2	0.8	0.4	1.3
Tuberculosis, all forms	60	73	133	56.5	64.0	73.6
Tuberculosis, pulmonary	56	68	124	52.7	60.1	66.2
Malaria	5	1	6	2.5	2.6	1.7
Cancer, all forms	92	31	123	52.3	59.3	53.1
Diabetes mellitus	8	13	21	8.9	12.5	8.3
Pellagra	8	8	16	6.8	13.7	10.9
Cerebral hemorrhage, apoplexy	92	58	150	63.8	57.6	54.4
Diseases of heart	184	119	303	128.8	99.2	111.9
Diarrhea and enteritis						
Under 2 years	10	6	16	6.8	1.7	5.7
2 years and over	5	4	9	3.8	2.1	3.5
Nephritis	79	68	147	62.5	62.7	72.7
Puerperal state, total	5	10	15	6.4	12.0	12.6
Puerperal septicemia	3	5	8	3.4	3.0	2.2
Congenital malformations	18	7	25	10.6	5.1	5.2
Congenital debility and other diseases of early infancy	46	47	93	39.5	39.9	36.6
Senility	11	19	30	12.7	12.0	9.1
Suicides	10	1	11	4.7	6.4	9.6
Homicides	12	47	59	25.1	20.2	19.6
Accidental burns	12	12	24	10.2	6.4	5.7
Accidental drownings	1	1	2	0.8		3.0
Accidental traumatism by firearms	1	3	4	1.7	3.0	3.5
Mine accidents		5	5	2.1	0.9	1.7
Railroad accidents	1	5	6	2.5	2.1	4.3
Automobile accidents	42	9	51	21.7	9.9	10.0
Other external causes	31	12	43	18.3	18.0	19.6
Other specified causes	176	137	313	133.1	120.3	138.9
Ill-defined and unknown causes	59	150	209	88.8	88.5	104.9

Book Abstracts and Reviews

Treatment in General Practice: By Harry Beckman, M. D., Professor of Pharmacology at Marquette University, School of Medicine, Milwaukee, Wisconsin. Second Edition, Revised and Entirely Reset. 889 pages. Philadelphia and London: W. B. Saunders Company. 1934. Cloth, \$10.00 net.

The first volume of Beckman's "Treatment" appeared in 1930. It possessed certain qualities which appealed to the medical reader—its brief description of each disease, barely more than a definition; its evaluation of various therapeutic measures; its liberal quotation from authoritative sources; its description not only of what drug to give but of how to give it—how much, how often, and by what route; and, finally, because of its well chosen prescriptions.

The second edition, without increase in size, contains several topics not previously included. Aspiration idiosyncrasy, agranulocytosis, cyanide poisoning, food allergy, hiccup, hyperinsulinism, simple achlorhydric anemia, tetany, and several other rarer conditions are included.

Whether in the first person, it reflects the author's personal experience, but a bibliography of over 2,500 articles gives proof that the experience of others is even more faithfully reflected in its pages.

C. K. W.

Modern Clinical Psychiatry: By Arthur P. Noyes, M. D., Superintendent of State Hospital for Mental Diseases, Howard, R. I. Formerly First Assistant at St. Elizabeth's Hospital, Washington, D. C.; Formerly Chief Executive Officer at the Boston Psychopathic Hospital. 485 pages. Philadelphia and London: W. B. Saunders Company, 1934. Cloth, \$4.50 net.

The present volume is one of the few works on psychiatry in which the author has displayed sufficient literary talent to lend attractiveness to his subject. Most books on clinical psychiatry appeal to those whose work is in this field but the general practitioner finds them difficult to understand. This new book presents the essentials of clinical psychiatry in a clear, sane and refreshing manner. It is easy to follow the author's attempt to clarify the nomenclature which is so baffling to most of us.

There are twenty-eight chapters in which the author strives to demonstrate the relationship between the anatomic, physiologic, chemical and psychologic facts insofar as pertinent to make a morbid mental process easier to interpret. No attempt is made to solve the thousands of problems concerning etiology of mental disease but the reader is given the views of the most commonly accepted authorities. The case records are excellent and original. Treatment is dealt with more liberally than in most similar works but the reviewer fails to detect anything remarkably new as regards therapy. More might have been written concerning the various forms of treatment of epilepsy and general paralysis. There is an exhaustive bibliography at the end of each chapter.

J. H. W.

The Practical Medicine Series of Year Books, 1933. Obstetrics and Gynecology, Obstetrics edited by Joseph B. De Lee, M. D., Professor of Obstetrics, University of Chicago Medical School; Chief of Obstetrics, Chicago Lying-In Hospital and Dispensary in affiliation with the University of Chicago. Gynecology edited by J. P. Greenhill, B. S., M. D., F. A. C. S. Associate Professor of Gynecology, Loyola University Medical School; Professor of Gynecology, Cook County Graduate School of Medicine; Attending Gynecologist, Cook County Hospital. The Year Book Publishers, Incorporated. 650 pages. Price \$2.50.

The abstracts compiled in this volume have been taken from American and foreign journals and cover many phases of obstetrics and gynecology. They are well chosen and the personal comments of the editors are numerous and appropriate.

The articles on abortions should be of great interest to the profession at large, especially those relative to the tuberculous patient. "Abortions for Social Reasons" deserve mention and the editor's personal comments are valuable. The use of the barbiturates and other means of analgesia and anesthesia in obstetrics is illuminating as are the articles dealing with the maternal death rate in hospital cases.

Numerous articles on the glands of internal secretion should prove of utmost interest at the present time to the general practitioner as well as the gynecologist. The discussion of "Gynecologic Aspects of Endocrinology" by the late E. Novak and the personal comment of the editor apparently have struck the gong which, to a degree at least, lends a much needed sedative to the claims of many in this field of work at the present moment.

The combining of so many abstracts into one volume is indeed an aid to those who wish to review the literature quickly.

H. S. B.

The Practical Medicine Series of Year Books: Pediatrics. Edited by Isaac A. Abt, M. D., Professor of Pediatrics, Northwestern University Medical School. 550 pages. The Year Book Publishers, Incorporated, Chicago. Price \$2.25.

The editor of the 1933 Year Book on Pediatrics is to be congratulated. He has collected the best of this year's literature.

Anyone interested in obstetrics and pediatrics should read the section on "Diseases of the New Born". The articles on "Cyanosis of the New Born" are well selected.

On the subject of breast feeding and artificial feeding but little new information is found in this book. Numerous workers are interested in early feeding of vegetables and these articles are well done but the value of the method is still unsettled.

The question of standardization of height and weight is always interesting to the pediatricist. An excellent article by Lucas and Pryor is found in this book.

The old subject of "Diarrhea in Infancy and Childhood" is well represented by numerous articles. One of the most recent additions to our therapeutic list—the apple therapy—is outlined in detail.

Many rare surgical cases are reported.

There are many good articles in the section on "Communicable Diseases". The ones on diphtheria, whooping cough, scarlet fever, and tuberculosis are well written. The one dose method of toxoid administration is described by Graham, Murphree and Gill.

R. P.

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THE JEROME COCHRAN LECTURE

PRESENT TRENDS IN THE STUDY OF RHEUMATIC FEVER AND RHEUMATOID ARTHRITIS*

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The subject which I have chosen for this lecture may well be called a double-barreled one, and no doubt is open to some criticism on that score. Since, however, rheumatic fever and rheumatoid arthritis are so closely allied clinically, and are being subjected to such intensive study at the present time, I want to discuss them together. The etiology and treatment of both diseases are still far from a solution, and perhaps this explains in part the great interest which they arouse in the minds of medical investigators. Furthermore, rheumatism and arthritis are both tremendous economic problems, the former with its toll of valvular heart disease and the latter with its army of bed-ridden cripples.

The epidemiologic and clinical similarities between rheumatic fever and rheumatoid arthritis are rather striking. For example, both diseases are most prevalent in cold damp climates and are rare in tropical countries. In both diseases there is often a history of repeated attacks with more or less freedom from symptoms between attacks. Both, of course, attack the joints and the clinical picture presented in both diseases is that of an infection which tends to take on a chronic course. Both diseases are associated with foci of infection and both diseases are complicated in a certain number of cases by iritis and subcutaneous nodules. Cardiac complications are common in rheumatic fever and rare in rheumatoid arthritis, except in those cases where

the rheumatoid state has been preceded by rheumatic fever. This occurs in a small per cent of cases.

PATHOLOGICAL STUDIES

In both rheumatic fever and rheumatoid arthritis, two types of pathologic lesions occur, proliferative changes and exudative changes. In rheumatic fever the proliferative changes occur chiefly throughout the vascular system. Such proliferation may occur diffusely, as in the adventitia of the blood-vessels, or discretely in the form of the submiliary nodules, or so-called Aschoff body, which is found chiefly in the myocardium, but which may also occur in the walls of blood vessels and in its typical form in the subcutaneous nodules. Microscopically the Aschoff body is a characteristic conglomeration of cells and is now generally looked upon as pathognomonic of rheumatic fever. The exudative changes of rheumatic fever occur chiefly in the joints, though an exudate may also form in the pleural or pericardial cavities. There is an infiltration of leukocytes and outpouring of fluid and cells into the cavity affected.

A number of important and fundamental pathological studies have appeared during the last few years which have thrown much light on the general nature of both rheumatic fever and rheumatoid arthritis. In rheumatic fever the studies of Klinge¹ have added knowledge concerning the finer pathologic changes in the Aschoff body. According to Klinge the initial injury in this lesion is in the connective tissue and is characterized by the presence of material staining like fibrin, the source of which is a disputed point. Klinge believes it to be a peculiar form of fibrinoid swelling of the ground substance. Von Glahn and Pappen-

1. Klinge, F.: Das Gewebbild des Fieberhaften Rheumatismus: das Rheumatische Fruhinfiltrat (Akutes degenerative-exsudatives Stadium), Virchows Arch. F. Path. Anat. 1930, 278: 438.

*Delivered to the Association in annual session, Birmingham, April 18, 1934.

heimer² have shown that the specific pathologic lesions of rheumatic fever are not limited to the cardiac muscle, but can be found in various blood vessels outside of the heart. This applies not only to the aorta, but even to the peripheral blood vessels. Interesting pathological studies have been made on the finer structure of the verrucous vegetations of the heart valve in rheumatic fever. Paul³ and others have described a peculiar form of rheumatic pneumonia.

In respect to the pathology of rheumatoid arthritis there has been complete corroboration of the classic studies of Nichols and Richardson,⁴ who in this country were certainly the first to point out the sharp anatomical differences between rheumatoid arthritis and osteo-arthritis. More recently Allison and Ghormley⁵ have described characteristic clumps of lymphoid cells in the inflamed synovial membranes of rheumatoid patients, changes which they consider pathognomic of the disease. Dawson and Boots⁶ have published a very interesting study on the histopathology of the subcutaneous nodules in rheumatoid arthritis, and Dawson⁷ has made an interesting comparative study of the subcutaneous nodules of rheumatic fever and those of rheumatoid arthritis. Dawson believes that the histologic structure of the subcutaneous nodules in rheumatoid arthritis presents a uniform and highly characteristic appearance, which is closely similar to, if not identical with, the lesions observed in the subcutaneous nodules of rheumatic fever. This observation leads Dawson to believe that rheumatic fever and rheumatoid arthritis are intimately related and possibly different responses

of affected individuals to the same etiologic agent.

Summarizing then, we may say that recent pathological investigations indicate that both rheumatic fever and rheumatoid arthritis are chronic granulomatous inflammatory conditions which are probably of infectious origin. There is one important difference, however. Whereas modern studies have shown that the entire vascular system is seriously involved in the pathology of rheumatic fever, the changes in rheumatoid arthritis are more closely confined to the joints themselves.

BACTERIOLOGIC STUDIES

The application of modern bacteriologic methods to the study of rheumatism and arthritis has yielded a great deal of interesting information. It must be admitted, however, that some of the results obtained are still subjects for heated controversy.

For more than thirty years it has been suspected that rheumatic fever was a streptococcal infection, and evidence in favor of this theory accumulates from year to year. Starting with Poynton and Paine⁸ in 1900, various investigators have succeeded in cultivating streptococci, usually of the viridans type, from the blood stream and from the joints of patients with rheumatic fever. The most important of these studies have been those of Rosenow⁹ (1913), Herry¹⁰ (1914), Clawson¹¹ (1925), Small¹², and Birkhaug¹³ (1927). In our own studies¹⁴

8. Poynton, F. J. and Paine, A.: The Etiology of Rheumatic Fever, *Lancet*, (Sept. 22) 1900, 2: 861.

9. Rosenow, E. C.: The Etiology of Articular and Muscular Rheumatism, *J. A. M. A.* 1913, 60: 1223.

10. Herry: Contribution a l'etude du rhumatisme articulaire-aigu. Essai de pathogenie et de serotherapie. Etude clinique, anatomique et experimentale, *Bull. de l'Acad., Roy. de Med.*, 1914, 28: 76.

11. Clawson, B. J.: Studies on the Etiology of Acute Rheumatic Fever, *J. Inf. Dis.*, (May) 1925, 36: 444.

12. Small, J. C.: The Bacterium Causing Rheumatic Fever and a Preliminary Account of the Therapeutic Action of Its Specific Antiserum, *Amer. J. Med. Sci.*, (Jan.) 1927, 173: 101.

13. Birkhaug, K. E.: Bacteriologic Studies of a Non-Methemoglobin-Forming Streptococcus with Special Reference to Its Soluble Toxin Production, *J. Inf. Dis.*, (May) 1927, 40: 549.

14. Cecil, R. L., Nicholls, E. E. and Stainsby, W. J.: Bacteriology of the Blood and Joints in Rheumatic Fever, *J. of Exper. Med.*, (Nov. 1) 1929, 50: 617.

2. Pappenheimer, A. M. and Von Glahn, W. C.: Studies in the Pathology of Rheumatic Fever, *Amer. J. of Path.*, (November) 1927, 3: 583.

3. Paul, J. R.: Pleural and Pulmonary Lesions in Rheumatic Fever, *Medicine* 1929, 7: 383.

4. Nichols, F. H. and Richardson, F. L.: Arthritis Deformans, *J. M. Research*, 1907, 16: 149.

5. Allison, N. and Ghormley, R. K.: Diagnosis in Joint Disease, New York, William Wood & Co., 1931.

6. Dawson, M. H. and Boots, R. H.: Subcutaneous Nodules in Rheumatoid (Chronic Infectious) Arthritis, *J. A. M. A.*, (Dec. 20) 1930, 95: 1894.

7. Dawson, M. H.: A Comparative Study of Subcutaneous Nodules in Rheumatic Fever and Rheumatoid Arthritis, *J. Exper., Med.* (May 1) 1933, 57: 845.

at Bellevue Hospital (1929), sixty patients with acute rheumatic fever received bacteriological study and in 35 of them an attenuated streptococcus was recovered from the blood stream. In 7 patients with rheumatic fever who were subjected to joint cultures, 5 or 71.4 per cent yielded a streptococcus. Nearly all of these strains were green streptococci, and agglutination and absorption tests indicated that the strains which had been recovered from the blood of rheumatic fever patients had a tendency to fall into specific biologic groups.

Callow¹⁵, under the direction of William H. Park, has recently published a rather elaborate report on the bacteriology of the blood in rheumatic fever. She found streptococci or pleomorphic bacilli in 70 per cent of patients with rheumatic fever, but exactly the same percentage of positive blood cultures were obtained in a series of patients with acute infections of the upper respiratory tract. In 39 normal persons, three (or 8 per cent) yielded pleomorphic bacilli; none of the normals contained streptococci. Control blood cultures were incubated and periodically opened by Callow in order to determine the incidence of contaminations. Organisms were recovered at different times in nine of the 86 bottles in this series. The rest remained sterile. No strains of streptococci or of pleomorphic bacilli were recovered from the control bottles in a single instance.

Wilson and Edmond¹⁶ recently reported their results of blood cultures on 67 children with rheumatic disease. In 46 per cent, positive cultures were obtained. The organisms recovered were either streptococci or pleomorphic bacilli. In a control of 78 children, positive blood cultures were obtained in 33 per cent, the organisms again being either streptococci or pleomorphic bacilli. In view of the positive findings obtained in the control series, the authors concluded that those organisms recovered from the blood of children with rheumatic disease

did not appear to be of primary etiologic significance.

Coburn¹⁷ was unable to recover streptococci from the blood or joints of rheumatic fever patients. On the other hand he found that there was a very close relationship between the presence of hemolytic streptococci in the throat and the onset of rheumatic fever.

Weinstein and Styron¹⁸ have recently reviewed Coburn's work and found that the percentage of throat cultures which were positive for the hemolytic streptococcus was no higher in rheumatic fever than it was in other conditions. They also noted that hemolytic streptococci were more often associated with infections of the upper respiratory tract and were more frequent in those who had not had their tonsils removed than in those on whom tonsillectomy had been performed. There is an enormous literature on the bacteriology of the throat in rheumatic fever. Unfortunately the limitations of time prevent a more detailed review of this interesting subject.

In rheumatoid arthritis as in rheumatic fever a great deal of bacteriological work has been done in an effort to determine the etiology of the disease; and again as in rheumatic fever the streptococcus is the organism which has been most frequently suspected as the causative agent.

Twenty-two years ago, Davis¹⁹ pointed out the high incidence of hemolytic streptococci in the tonsils of patients with rheumatoid arthritis and produced experimental arthritis in rabbits with these strains. Rosenow²⁰ (1914) recovered streptococci from the enlarged lymph nodes of patients with rheumatoid arthritis, and from time to time since then, various observers have succeeded in cultivating streptococci from both the blood stream and the joints of patients with rheumatoid arthritis. The percentage of

15. Callow, B. R.: Bacteriologic Investigation of the Blood in Rheumatic Fever, *J. Inf. Dis.*, (May) 1933, 52: 279.

16. Wilson, M. G. and Edmond, H.: Blood Cultures in Children with Rheumatic Fever, *Amer. J. of Dis. of Children*, (June) 1933, 45: 1237.

17. Coburn, A. F.: The Factor of Infection in the Rheumatic State, Baltimore, Md., The Williams & Wilkins Co., 1931.

18. Weinstein, I. and Styron, N. C.: Bacteriologic Study of Throats in Rheumatic and Non-Rheumatic Fever, with Special Reference to Hemolytic Streptococci, *Arch. Int. Med.*, (March) 1934, 53: 453.

19. Davis, D. J.: Bacteriological and Experimental Observations on Focal Infections, *Arch. Int. Med.*, (April) 1921, 9:505.

20. Rosenow, E. C.: The Etiology of Arthritis Deformans, *J. A. M. A.*, (Apr. 11) 1914, 62: 1146.

positive findings in the latter disease, however, was never so high as in rheumatic fever. Forkner, Shands and Poston²¹ took cultures from the joints in 63 cases of chronic infectious arthritis and recovered *Streptococcus viridans* in 11 (17.4 per cent) of the series. Two others yielded gonococci. The writer, in collaboration with Nicholls and Stainsby (1929²² and 1931²³), made a detailed bacteriologic study of the blood and joints of patients with rheumatoid arthritis. In a series of 154 cases of rheumatoid arthritis, 94 (62.3 per cent) yielded streptococci in the blood, while in 49 cases, 35 (67.3 per cent) showed streptococci in the blood, while in 49 cases, 35 (67.3 per cent) showed streptococci in the joints. Most of the strains recovered in our series were attenuated hemolytic streptococci with some green production also. These reports have awakened considerable interest in the bacteriology of rheumatoid arthritis, and several studies along this line have already appeared in the literature, some confirming and others failing to confirm the findings of Cecil, Nicholls and Stainsby. Recent confirmatory studies include the following: Margolis and Dorsey²⁴, 89 cases of rheumatoid arthritis, with 9 (10.1 per cent) positive for streptococcus; Kracke and Teasley²⁵, 120 cases studied, with 13 (10.8 per cent) positive; Klugh²⁶, 74 cases studied, with 53 (71.6 per cent) positive; Gray and Gowen²⁷, 71 cases studied, with 41 (57.7 per cent) positive; Wetherby and

Clawson²⁸, 50 cases studied, with 25 (50 per cent) positive. On the other hand, Nye and Waxelbaum²⁹, Bernhardt and Hench³⁰ and Dawson, Olmstead and Boots³¹ were unable to confirm these findings.

A new report on the bacteriology of the joints in rheumatoid arthritis has just been published by Blair and Hallman³². In a series of 57 cultures of fluids and synovial tissue from the joints of patients with rheumatoid arthritis, 25.4 per cent yielded positive cultures. The organisms obtained were mostly streptococci or pleomorphic bacilli. In cultures from 175 control joints and tissues, 18.8 per cent were positive. In view of these findings the authors concluded that no direct etiologic significance could be attached to any of the organisms obtained in the cultures.

It is obvious from this brief review of the modern bacteriology of rheumatism and arthritis that the results have been quite contradictory, though the evidence continues to increase that streptococci are in some way related to the etiology of these diseases. This is even more suggestive when we recall that Callow¹⁶ and several other bacteriologists have claimed that pleomorphic bacilli obtained in cultures from rheumatic and arthritic patients can under certain cultural conditions be transmuted into streptococci. But it must be admitted that as long as bacteriologists continue to disagree so widely as to the results of blood and joint cultures in these diseases, it will be impossible to reach a final conclusion on this important point.

IMMUNOLOGIC STUDIES

The theory that rheumatic fever and rheumatoid arthritis are both streptococcal

21. Forkner, C. E., Shands, A. R. and Poston, M. A.: Synovial Fluid in Chronic Arthritis, Arch., Int. Med., (Nov.) 1928, 42: 675.

22. Cecil, R. L., Nicholls, E. E. and Stainsby, W. J.: The Bacteriology of the Blood and Joints in Chronic Infectious Arthritis, Arch., Int., Med., (May) 1929, 45: 571.

23. Cecil, R. L., Nicholls, E. E. and Stainsby, W. J.: The Etiology of Rheumatoid Arthritis, Amer. J. Med. Sci., (Jan.) 1931, 181: 12.

24. Margolis, H. M. and Dorsey, A. H. E.: Bacteriology of the Blood in Chronic Infectious Arthritis, J. Inf. Dis. (June) 1930, 46: 442.

25. Kracke, R. R. and Teasley, H. E.: The Efficiency of Blood Cultures, J. Lab. & Clin., Med., (Nov.) 1930, 16: 169.

26. Klugh, G. F., Streptococci from Blood Cultures in Arthritis, So. Med. J., (Aug.) 1931, 24: 1.

27. Gray, J. W. and Gowen, C. H.: The Role of Streptococcus in Arthritis Deformans, Amer. J. Med. Sci., (Nov.) 1931, 182: 682.

28. Wetherby, M. and Clawson, B. J.: Chronic Arthritis, Arch., Int. Med., (Feb.) 1932, 49: 303.

29. Nye, R. N. and Waxelbaum, E. A.: Streptococci in Infectious (Atrophic) Arthritis and Rheumatic Fever, J. Exper. Med., (Dec.) 1930, 52: 885.

30. Bernhardt, H. and Hench, P. S.: Bacteriology of the Blood in Chronic Infectious Arthritis, J. Inf. Dis., (Dec.) 1931, 49: 489.

31. Dawson, M. H., Olmstead and Boots, R. H.: Bacteriologic Investigations on the Blood, Synovial Fluid and Subcutaneous Nodules in Rheumatoid (Chronic Infectious) Arthritis, Arch. Int. Med., (Feb.) 1932, 49: 173.

32. Blair, J. E. and Hallman, F. A.: Rheumatoid (Atrophic) Arthritis: Bacteriologic Cultures of Synovial Fluid and of Tissues, Arch. Int. Med., (Jan.) 1934, 53: 87.

infections has received considerable support from the demonstration in the sera of patients with these diseases of specific streptococcal immune bodies. For example, Tunnicliff³³ performed agglutination reactions with the sera of twelve rheumatic fever patients against strains of *Diplococcus rheumaticus* and *Streptococcus pyogenes*, and demonstrated agglutinins in small amounts in seven instances. Swift and Kinsella³⁴ failed to find any streptococcal agglutinins in the sera of five patients with rheumatic fever against streptococci which they had recovered from their respective blood cultures; but Clawson¹², working with strains of *Streptococcus viridans* isolated from cases of rheumatic fever, found agglutinins in four out of the five sera examined. Small¹³ demonstrated agglutinins for the so-called "*Streptococcus cardioarthritidis*" in the sera of ten patients with rheumatic fever. By means of agglutination and absorption tests, Cecil, Nicholls and Stainsby²³ showed that the strains of streptococci recovered from the blood of patients with rheumatic fever showed a tendency to fall into specific biologic groups. In a later publication, Nicholls and Stainsby³⁵ made a more detailed report on the streptococcal agglutinins in rheumatic fever and showed that these agglutinins were present in the joints as well as in the sera of rheumatic patients. Coburn and Pauli³⁶ have recently claimed that the agglutination and complement fixation reactions of sera from patients with acute rheumatism point definitely toward streptococcus infection. Furthermore they found that precipitin tests indicate that at the time of the rheumatic attack, patients develop in their blood specific precipitins to the protein fractions of the hemolytic streptococcus. Finally these same authors demonstrated that at the onset of rheumatic fever, there occurs in each in-

stance a rise in the antistreptolysin titer of the patient's serum. The authors consider this rise in antistreptolysin as particularly strong evidence of recent infection by the hemolytic streptococcus.

The presence of specific agglutinins for *Streptococcus hemolyticus* in the sera of patients with rheumatoid arthritis was first described in 1931 by Cecil, Nicholls and Stainsby²³. In a series of 103 cases of rheumatoid arthritis, 87 showed agglutination with the "typical strain" of streptococcus at a dilution of 1:640 or higher, while in a series of 50 normal controls the serum in every case failed to give a strong agglutination reaction. Of 102 pathologic controls, only 2 patients gave a positive reading at a dilution of 1:640 or higher. In a later report on streptococcal agglutinins in rheumatoid arthritis, Nicholls and Stainsby³⁷ noted that hemolytic streptococci from other sources, such as scarlet fever and erysipelas, were often agglutinable by arthritic serum, but not to such a high degree as the organism recovered from rheumatoid patients. Dawson, Olmstead and Boots³⁸ confirmed the presence of these agglutinins in the serums of patients with rheumatoid arthritis, obtaining positive reactions in 67 per cent of 157 typical cases. They further noted that the reaction still occurred after the streptococci had been killed by heating them from one to two hours at 55 C., and this observation we have recently corroborated in our own laboratory. The capacity of rheumatoid serum to agglutinate killed streptococci would appear to eliminate this reaction from the group of nonspecific streptococcal agglutinins recently described by Tillett and Abernathy³⁹ in various infectious diseases.

It is quite significant that Dawson, Olmstead and Boots³⁸ were able to corroborate the presence of these specific agglutinins for hemolytic streptococci in the serum of rheumatoid patients, though they were unable to recover hemolytic streptococci, such

33. Tunnicliff, R. J.: The Opsonic Index in Acute Articular Rheumatism, *J. Inf. Dis.*, 1909, 6: 346.

34. Swift, H. F. and Kinsella, R. A.: Bacteriologic Studies in Acute Rheumatic Fever, *Arch., Int. Med.*, 1917, 19: 381.

35. Nicholls, E. E., and Stainsby, W. J.: Streptococcal Agglutinins in Rheumatic Fever, *J. Clin. Invest.*, (June) 1931, 10.

36. Coburn, A. F. and Pauli, R. H.: Studies on the Relationship of *Streptococcus Hemolyticus* to the Rheumatic Process, *J. Exp. Med.*, (Nov. 1) 1932, 56: 609.

37. Nicholls, E. E. and Stainsby, W. J.: Streptococcal Agglutinins in Chronic Infectious Arthritis, *J. Clin. Invest.*, (June) 1931, 10: 323.

38. Dawson, M. H., Olmstead, M. and Boots, R. H.: Agglutination Reactions in Rheumatoid Arthritis, *J. Immun.*, (Sept.) 1932, 23: 187.

39. Tillett, W. S. and Abernathy, T. J.: Serological Reactions with Hemolytic Streptococci in Acute Bacterial Infections, *Bull. Johns Hopkins Hosp.*, (April) 1932, 50: 270.

as those described by us, in the blood and joints of rheumatoid patients. The presence of these agglutinins in the serum of patients with rheumatoid arthritis has also been confirmed by Gray, Fendrick and Gowen⁴⁰, by Clawson and his co-workers⁴¹, and by Keefer, Myers and Oppel⁴².

It seems fair to conclude from these various investigations that the streptococcal agglutinins present in the sera of patients with rheumatoid arthritis are specific agglutinins differing in no essential respect from the specific agglutinins of other micro-organisms.

ALLERGIC STUDIES

The similarity of the joints in rheumatic fever and acute infectious arthritis to the acute joints of serum disease has stimulated a number of investigators to the formulation of theories as to the factor of allergy in the etiology of these diseases. Klinge⁴³, for example, has reported wide-spread focal lesions following repeated intra-articular injections of horse serum into rabbits previously sensitized to this particular protein. Klinge contends that the lesions produced in his rabbits have many points of resemblance to those found in rheumatic fever, and he believes that this peculiar type of lesion is the result of repeated shocks of hypersensitive tissue with foreign protein. Working on the theory that the symptoms in rheumatic fever were allergic manifestations from some chronic focus of infection, a number of investigators have studied skin reactions in rheumatic fever. Derick and

Fulton⁴⁴ recently found that 88 per cent of rheumatic children between six and ten years of age gave positive skin reactions to hemolytic streptococcus nucleo-proteins, compared with 12 per cent among nonrheumatic controls of the same age; and Curnburn³⁶ has found that patients with rheumatic fever furnish the highest proportion of reactors to a similar hemolytic streptococcus nucleo-protein. Using a filtrate of indifferent streptococcus, Duckett Jones found 96 per cent of positive skin reactions among 130 rheumatic children at some period of the disease, and reports that spontaneous recovery was usually accompanied by increasing reaction to this filtrate. Myers, Keefer and Oppel⁴⁵ carried out skin tests with the nucleo-protein of the *Streptococcus hemolyticus* on patients with rheumatic fever and rheumatoid arthritis and obtained the following results: Of the 40 patients with rheumatic fever, 77 per cent gave positive reactions, and in 32 per cent the reactions were marked. In 20 patients with rheumatoid arthritis, 70 per cent gave positive reactions, of which 32 per cent were marked. Of skin tests on 20 patients with respiratory infections due to the hemolytic streptococcus, 95 per cent were positive, of which 35 per cent were marked. In a control group of 207 cases, 44 per cent gave a positive reaction, but in only 12 per cent was the reaction marked. From these observations the authors conclude that the presence of strongly positive skin reactions in patients with rheumatic fever and rheumatoid arthritis indicates that these patients may be highly allergic to the products of the hemolytic streptococcus.

Summarizing, then, we may say that most of the recent immunologic and allergic studies in connection with rheumatic fever and rheumatoid arthritis point strongly toward the importance of the streptococcus as an etiologic factor. One fact stands out clearly, however, in reviewing these studies, and that is that there is considerable disagreement among investigators in terminology.

44. Derick, C. L. and Fulton, M. N.: Skin Reactions of Patients and Normal Individuals to Protein Extracts of Streptococci, *J. Clin. Invest.*, 1931, 10: 121.

45. Myers, W. K., Keefer, C. S., Oppel, T. W.: Skin Reactions to Nucleoprotein of *Streptococcus Scarlatinae* in Patients with Rheumatoid Arthritis and Rheumatic Fever, *J. Clin. Invest.*, (March) 1933, 12: 279.

40. Gray, J. W., Fendrick, E. and Gowen, C. H.: Rheumatic Fever and Rheumatoid Arthritis from the Laboratory Point of View, Texas St., *J. of Med.*, (Sept.) 1932, 28: 317.

41. Clawson, B. J., Wetherby, M. and Hilbert, E. H., and Hilleboe, H. E.: Streptococcal Agglutination in Chronic Arthritis and Acute Rheumatic Fever, *Am. J. Med. Sci.*, (Dec.) 1932, 184: 758.

42. Keefer, C. S., Myers, W. K. and Oppel, T. W.: Streptococcal Agglutinins in Patients with Rheumatoid (Atrophic) Arthritis and Acute Rheumatic Fever, *J. Clin. Invest.*, (March) 1933, 12: 267.

43. Klinge, F.: Die Eiweissuberempfindlichkeit Gewebsanaphylaxie der Gelenke: Experimentelle Pathologisch-anatomische Studie zur Pathogenese des Gelenkrheumatismus. *Beitr. z. path. Anat. u. z. allgem. Pathol.* (Festschr. f. Max Borst) 1920-1930, 83: 185.

One writer speaks of the *Streptococcus hemolyticus*; another of the *Streptococcus viridans*; and still another of the nonhemolytic streptococcus in their relation to rheumatic disease. These differences are not so inconsistent, however, as they at first appear. In the first place, slight differences in culture media produce a difference in the appearance of streptococci; furthermore, several recent investigators have shown that mutation is possible from one form into the other.

PHYSIOLOGIC STUDIES

The most important physiologic studies on rheumatic fever have been in connection with the effect of rheumatic carditis on the cardiac rhythm. Swift⁴⁶ has found that in rheumatic fever patients, daily or bi-weekly electrocardiograms showed transitory abnormalities in 95 per cent of all patients. Rothschild, Sacks and Libman⁴⁷ investigated 65 consecutive cases of rheumatic fever, and found definite delay in the P-R interval in a high percentage of them. Master⁴⁸ believes that daily electrocardiograms in rheumatic fever will show abnormalities in the tracing in one hundred per cent of cases. In his 63 cases of rheumatic fever, definite electrocardiographic evidence of myocardial involvement was present in every case. On the contrary, in 17 patients with rheumatoid arthritis on whom electrocardiograms were taken daily, only the slightest evidence of myocardial involvement was recorded.

Pemberton, Peirce and Cajori⁴⁹ have made some interesting observations on the blood flow in the capillaries in arthritis. In a series of 174 observations on 59 cases, these investigators found that the arthritic showed distinctly less blood in the field, closure or narrowing of many capillaries, irregularity and slowing down of blood flow, and often a different amount of blood in the

venous as compared with the arterial limb of a capillary. This phenomenon no doubt explains in large part the cold extremities which are so characteristic of the arthritic patient.

LABORATORY METHODS

During the last few years a number of new laboratory methods have come into vogue which have proved valuable, not only in differential diagnosis of rheumatic fever and rheumatoid arthritis but also as gauges to the activity of the infection. I refer particularly to the sedimentation rate of the red blood cells and the Schilling hemogram. The agglutination reaction with *Streptococcus hemolyticus* is also of value, particularly in the differentiation of rheumatoid arthritis from other forms of chronic joint disease. The roentgenogram is of considerable help in distinguishing infectious from degenerative and traumatic joint conditions. I have already indicated above the great importance of the electrocardiogram in the study of rheumatic fever. Blood and joint cultures may yield valuable information, but these require an elaborate technic and considerable time and skill on the part of the bacteriologist. Allison and Ghormley⁶ have suggested excision of tissue from affected joints as a routine diagnostic procedure. The synovial membrane in rheumatoid arthritis shows a characteristic pathological condition and the same is true of syphilitic and tuberculous joints. If time permitted, a great deal more could be said about the importance of these laboratory procedures in the diagnosis of joint diseases.

PRESENT TRENDS IN TREATMENT

In rheumatic fever we must still depend in great measure on the salicylates. We have as yet no sure method of killing the virus and for this reason relapses are still common in this disease. Rheumatic fever is chiefly a disease of children, and the treatment of the disease in them is largely a matter of treating the cardiac lesions. The arthritic symptoms very rarely fail to subside quickly. The recovery of the heart is another matter. So far as drug therapy goes, it appears likely that in view of the recent reports on the toxicity of cincophen and the still more recent reports on the tendency of amidopyrine to depress the leukocyte

46. Swift, H.: Rheumatic Fever, Cecil's Text-Book of Medicine, Phila., Pa., W. B. Saunders Co., 1933, p. 86.

47. Rothschild, M. A., Sacks, B., and Libman, E.: The Disturbances of the Cardiac Mechanism in Subacute Bacterial Endocarditis and Rheumatic Fever, Amer. Heart J., (April) 1927, 2: 356.

48. Master, A. M. and Jaffe, H.: Rheumatoid (Infectious) Arthritis and Acute Rheumatic Fever, J. A. M. A., (March 12) 1932, 98: 881.

49. Pemberton, R.: Arthritis and Rheumatoid Conditions, Their Nature and Treatment, Phila., Pa., Lea & Febiger, 1929, p. 117.

count, practitioners will lean more on sodium salicylate and acetylsalicylic acid. The writer is particularly partial to the treatment of rheumatic fever with large doses of aspirin, and frequently gives children as much as a hundred or a hundred and fifty grains a day without any serious discomfort to the patient, and often with striking clinical effects.

There has been a tendency in some clinics to remove infected tonsils during the active stage of rheumatic fever, the argument being that by such treatment the original focus of infection would be removed and the course of the general infection shortened. This idea is opposed, however, by more conservative members of the profession who feel that there is too much danger of stirring up a sharp exacerbation.

Small's⁵⁰ antistreptococcic serum for the treatment of rheumatic fever has not achieved much popularity and Swift⁵¹ has found that antistreptococcus serum is no more efficient than normal horse serum.

Streptococcus vaccine is not indicated in the acute stage of rheumatic fever, but where the disease takes on a subacute or chronic form, small intravenous injections of streptococcus vaccine may be of distinct value. May Wilson⁵² has obtained some promising results with this form of therapy. In the opinion of the writer, streptococcus vaccine has a distinct prophylactic value in preventing recurrences of rheumatism. I have had a number of youngsters and young adults under my care who have been kept free of recurring attacks of rheumatic fever by a course of intravenous streptococcus vaccine therapy every winter and spring.

There has been a good deal of interest manifested recently in the climate cure of rheumatic fever, particularly in children with rheumatic heart disease. Groups of children with rheumatic hearts and with a tendency to recurring attacks of rheumatic

fever have been transported to the West Indies, and without exception have remained free of rheumatism while living in the tropics. Unfortunately many of these children promptly develop acute rheumatism when they returned to a northern climate.

The treatment of rheumatoid arthritis has made considerable advances during the past decade, largely because of intensive study of the disease in various clinics in America and Europe. Focal infection therapy is still strongly featured in most clinics and, in the opinion of the writer, forms the keystone of the modern treatment of rheumatoid arthritis.

Rest has come to be looked on as one of the most important factors in the treatment of rheumatoid arthritis. By rest I mean not only physical rest, but rest from business, rest from the ordinary duties and vicissitudes of daily life. It is not saying too much to state that many rheumatoid patients, if taken early, could be cured by rest alone. It is strange how quickly patients accept the idea of a rest cure for tuberculosis, yet hesitate to leave home and work for the cure of arthritis. The fear of death, of course, is lacking with the latter disease, but certainly the possibility of permanent crippling is almost as bad. Under rest must also be included freedom from emotional strain. The emotions have much to do with both the onset and recovery in rheumatoid arthritis, and the prognosis will depend in great measure on the capacity of the patient to maintain an emotional equilibrium.

The reduction of carbohydrates in the diet of the arthritic patient was first advocated by Pemberton⁵³. I believe this is good practice, particularly if the weight can be maintained in thin patients by the adequate substitution of proteins and fats. Recent investigations suggest that the rationale for carbohydrate reduction lies in the increased consumption of vitamins that goes with the increased intake of protein and fat.

The investigations of Fletcher⁵⁴ indicate that many patients with chronic arthritis show an atony and dilatation of the colon,

50. Small, J. C.: The Bacterium Causing Rheumatic Fever and a Preliminary Account of the Therapeutic Action of its Specific Anti-Serum, *Amer. J. Med. Sci.*, (Jan.) 1927, 173: 1.

51. Swift, H.: Rheumatic Fever, Cecil's Text-Book of Medicine, Phila., Pa., W. B. Saunders Co., 1933, p. 93.

52. Wilson, M. G., Josephi, M. G. and Lang, D. M.: Intravenous Vaccination with Streptococci, *Amer. J. Dis. Children*, (Dec.) 1933, 46: 1337.

53. Pemberton, R. and Peirce, E. C.: Relation of the Intestinal Tract and Diet in the Treatment of Arthritis, *Ann. Int. Med.*, (April) 1932, 5: 1221.

54. Fletcher, A. A.: The Nutritional Factor in Chronic Arthritis, *J. Lab. & Clin. Med.*, (Aug.) 1930, 15: 1140.

and that the administration of vitamin B to such patients will often bring about a return to normal in the contour of the bowel, and a corresponding improvement in the patient. Furthermore, vitamins A, B and C all appear to bear some relation to resistance to infection. For these reasons many practitioners are now giving vitamin A, B and C (and sometimes D) to all patients with rheumatoid arthritis. The effect of this treatment on the general health of the patient is often quite striking, even if the condition of the joints remains unaffected.

The idea of elimination in the treatment of arthritis is not new. Indeed it has been practised for several thousand years at the major European spas, where hot baths, hot packs and copious water drinking have been popular methods of treatment. Elimination through the bowels, bladder and skin is still good therapy, and even colonic irrigations may be indicated, particularly in patients who have a tendency toward constipation or intestinal auto-intoxication.

Physical therapy has made great strides during the last twenty years, and certain forms of it have a definite place in the treatment of rheumatoid arthritis. The most interesting new phase of physical therapy is the use of hyperthermia or artificial fever, which is produced by diathermy. Enthusiasm for this form of therapy varies in different clinics. Personally I prefer intravenous injections of typhoid vaccine for producing febrile reactions. It is much simpler and gives the patient less discomfort.

During recent years American physicians through the North and East have been sending more and more arthritic patients to Arizona or New Mexico for the climate cure. Many are benefited by such treatment, but unfortunately most arthritics are unable to make such a long trip and many of the more advanced cases who do go to Arizona fail to receive much benefit from the change of climate.

Vaccine therapy in rheumatoid arthritis was condemned by Frank Billings⁵⁵ as useless almost twenty years ago, but in recent times improved methods of selecting the or-

ganisms and improved methods of administration have brought back its popularity to a considerable degree. At the present time intravenous injections of streptococcus vaccine in small doses are very popular and are used in many of our leading clinics. This form of therapy often has a very striking effect on patients whose joint changes are not too far advanced.

The drug therapy of rheumatoid arthritis has not undergone much change. Iron is indicated for secondary anemia and arsenic and strychnine for their tonic effects. The salicylates may be used for the relief of pain. Forestier⁵⁶ in France and Slot and Deville⁵⁷ in England are quite enthusiastic over the use of gold thiocyanate. My own experience with the gold salts has been quite limited, but so far the results have not been striking.

Orthopedic surgery has made great strides in correcting deformities and ankyloses which develop in the later stages of rheumatoid arthritis. Synovectomy, arthroplasty and arthrodesis have all achieved important places in modern joint surgery. Sympathectomy of the cervical or lumbar ganglions has been advocated by Rowntree, Adson and Hench⁵⁸, but this operation is indicated in only a few carefully selected cases.

SUMMARY

1. Rheumatic fever and rheumatoid arthritis are both great medical and public health problems, the former because of the high death rate which it causes in children with rheumatic heart disease, the latter because of the large number of its victims who become bed-ridden cripples.

2. Rheumatic fever and rheumatoid arthritis are probably both infections, and probably infections caused by closely related agents. There is considerable evidence that both are streptococcal infections.

56. Forestier, J. F.: Treatment of Rheumatoid Arthritis with Gold Salts Injections, *Lancet*, (Feb. 27) 1932, 441.

57. Slot, G. and Deville, P. M.: Treatment of Arthritis and Rheumatism with Gold, *Lancet*, (Jan. 13) 1934, 73.

58. Rowntree, L. G., Adson, A. W. and Hench, P. S.: Preliminary Results of Resection of Sympathetic Ganglia and Trunks in Seventeen Cases of Chronic "Infectious" Arthritis, *Ann. Int. Med.* (Nov.) 1930, 4: 447.

55. Billings, F., Coleman, G. H. and Hibbs, W. G.: Chronic Infectious Arthritis: Statistical Report with End-Results, *J. A. M. A.* (April 15) 1922, 78: 1097.

3. The histopathology of rheumatic fever and rheumatoid arthritis is not identical, but there are certain rather striking similarities. Both are characterized by the formation of granulomatous tissue, but in rheumatic fever the inflammatory changes occur chiefly in the heart and blood vessels, while in rheumatoid arthritis these changes are found almost entirely in the synovial membranes. Subcutaneous nodules are fairly common in both diseases, and the histopathology of these is quite similar in the two diseases.

4. Both diseases are characterized by certain changes in the blood, such as leukocytosis, Schilling's "shift to the left", and increase in the sedimentation rate of the red blood cells. In both diseases streptococci of various kinds have been found quite frequently in the blood (and joints) by some observers, and specific antistreptococcal immune bodies have been demonstrated in the sera of patients suffering from either disease.

5. Bacterial allergy probably plays an important part in both conditions. Both are usually associated with foci of infection, and it is quite likely that the joints become more or less sensitized by the original focus of infection.

6. Differential diagnosis has been made much more accurate by the development of newer laboratory methods, such as the sedimentation rate of the red blood cells, the agglutination reaction and the Schilling count. The x-ray and the electrocardiogram also play important roles.

7. The modern treatment of rheumatic fever depends on the salicylates for relief of the immediate joint symptoms. The problem of preventing recurrences, with their inevitable damage to the heart is being solved, to some extent, by removal of foci of infection, streptococcus vaccine, and transportation of the patient to a tropical climate.

The treatment of rheumatoid arthritis embraces the prompt elimination of foci of infection, with emphasis on rest and a general building-up program consisting of carefully regulated diet, vitamins, iron and arsenic, and adequate elimination through the intestine, bladder and skin. Streptococcus vaccine, administered intravenously is of considerable value in many cases,

though its *modus operandi* is not yet understood. Physical therapy, if carefully supervised, is useful in stimulating the local and general circulation. In advanced cases, orthopedic surgery may solve an otherwise baffling problem.

THE PHYSICIAN AS SCHOLAR AND STATESMAN*

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The evolution of life and its attainments is a serial story of progression based upon ambition and necessity. Endowed with talents to wage a competitive existence, man invokes the prerogatives of a free agent in building a career according to his own specifications. Spurred by ambition toward the goals of usefulness and completeness, his spirit is attuned to the inspirational thought that "the sea hath bounds but deep desire hath none" and his efforts lend endorsement to the words of Theodore Roosevelt: "Let us pay with our bodies for our soul's desire."

As the certain and impartial lapse of time tolls its exaction, currents and cross currents of genuine and pseudo-issues arise to perplex the earnest and determined student while silhouetted upon the distant skies, along the course of march, he must face imperfections, disappointments and the necessity of compromise and substitutions. However, a sustaining ambition and a sense of stable necessity urges man, with a free will, to elect between combativeness and victory or to surrender and retreat when confronted with the "fearful concatenation of circumstances." Man must meet with these elements regardless of avocation, so it behooves him to prepare the antidote in the development of vision, in the acquisition of knowledge and in the formulary of a balanced perspective and conduct.

Not a physician in the broad expanse of the civilized world is ignorant of the master works of the pioneers and later day leaders in medical science. Generations of physicians of the past and the future posterity of the profession have and will ever memo-

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rialize the deeds of these benefactors of mankind. As the cyclic evolution of time impartially measures the period of our existence, a constant and bountiful blessing will be the contribution of the medical profession to the inhabitants of the globe. On many occasions, before this body, speakers have unfolded the characters, works and influence of such men and scientists as Hunter, Jenner, Lister, Pasteur, Koch, Nogouchi, Osler, Gorgas and others too numerous to include in this roll call of honor. Familiar as we are with the history of these immortals and the impression made upon the human race as a result of their medical triumphs we must look deeper into the impulses energizing their efforts than the mere scientific attainments of nature. Though unusual and brilliant mental faculties made of these men pre-eminent and world famous scientists, yet, in the fabric of their make-up, there was ingrained into them the simpler and more common attributes that may be found in all men,—the qualities of scholar and statesman. It is this phase of their lives that is applicable to us and that will be touched upon in this presentation. The medical profession of today has its able, alert and persevering research students; it has its careful and thoughtful clinicians. The great need of the present is the conversion of every member into leaders of education and statescraft. Everyone is not destined to explore the yet undetermined mysteries of science, but to each of us is afforded the opportunity of leadership. Then, the irreducible qualities of the leader are a matchless scholarship and a refined statesmanship.

THE PHYSICIAN AS A SCHOLAR

A doctor is properly termed a student of medicine. His career is one of unceasing search for knowledge and of studious application. His profession is one teeming with undiscovered facts and is dominated by a curriculum changing with announcements of scientific discoveries. Truly, medicine is classified among the liberal arts and its disciples are found to be tolerant, elastic and submissive, these qualifications comprising the cardinal attributes of a scholar. The embryo medical student begins his career in an atmosphere of learning, absorbing the fundamentals of a science, main-

taining an interest in the mannerisms and life of the scientist, evolving a blue-print of life for himself, dedicating his talents and energies to the vocation of choice, building an intellectual structure for endurance and usefulness, chiseling a personality patterned after those representing the dreams of untouched ideals, synchronizing the capacities of body and mind, moulding a product fit for the competitive endeavors of life. Leaving college the graduate of medicine joins the ranks of practitioners handsomely equipped with assets that but remain to be equalized in the wide and testing fields of experience. A scholar he remains, a better student he becomes and the formula of college training colors his ambitions and rules his higher passions, provided he meets contacts that are conducive of competition and of progress. A scholar is the progenitor of the teacher, for to him who is endowed with knowledge must be delegated the task of instructing. Hedged about by an indispensable and mutual partnership composed of the physicist, the research analyst, the physiologist, the chemist, the biologist and the clinician, the individual medical scholar appraises his dependence upon collaborators; he disclaims the opprobrium of self sufficiency, pushes aside "the fuming vanities of the earth", enjoys the aroma of simplicity and shuns the glare of the braggart. The genuine role of the scholar is not portrayed by the doctor on dress parade but is depicted by modesty and humility. A picture contrary to this reduces the scholar to pseudo-intelligence and reminds one of "how many saucy airs we meet, from Temple Bar to Aldgate Street." The disciple of learning expends wisely directed efforts and connotes the essence of simplicity in revealing the mysteries of science. To his colleagues and to the public he is an intellectual promoter, moulding opinion, breaking down the barriers of superstition and ignorance, developing the golden fibers in the fabric of humanities, leading his fellow creatures toward the Elysian fields of health and happiness.

Tennyson admonishes that "knowledge comes but wisdom lingers." The scholarly physician abstracts from every contact a full quota of information to augment the storehouse of knowledge and, as the process of refinement of elemental facts takes

place, the student transforms the by-product of education into correlated energies. The possession of mere facts does not constitute the keystone of the arch of learning. The scholar, adorned with the lustrous and rich endowment of dogma and precept seeks an outlet for testing their value and liberalizing a viewpoint that might otherwise become provincial and intolerant. Liberalism is an essential and elemental attribute of the scholar. Controversy is the mainspring of liberalism from which flow the waters of wholesome debate begetting tolerance, catholicity in interests, breadth in views of scientific issues, acceptance of arguments that are in disagreement. Such tolerance is not inimical to the right to hold true to special convictions for, in the words of a Southern writer, "things worth while are accomplished by those who believe." The scholar shrinks from the characteristics of the paleologist; he speaks directly but without the tone of finality; he manages to evade statements smacking of pristine assurance and when these desiderata are achieved his influence is beneficent, his dignity and worth are acclaimed and his contribution not only to science, but to the human race, is an encyclical of power, of trust and of merit.

While a great deal of education can be dispensed in the daily contacts with patients, certainly a richer harvest can be reaped where and when scholars meet in concert. There must be an outlet for the presentation of unified and endorsed medical thought and technic to the profession. The doctor must have varied means of enlightenment as the scope of medicine is too broad for the individual brain to grapple alone with its many intricacies. In addition, this enlightenment will guard against divided interpretations of medical subjects that bewilder the non-medical mind and create an attitude of mistrust and cynicism in the very minds we should guide in such matters. Assuming physicians are scholars, we must deport ourselves as such. Through the Association of organized medicine in Alabama our imprint upon the body politic of this State can be indelibly impressed. Use this Association as a stepping stone for personal as well as civic improvement. Enter into the programs as an outward manifestation of humility and honest

confession that something can be learned from a colleague. The scholar does not erect a citadel of self sufficiency in which he is the High Lord Mayor, nor does he refrain from fraternizing with his confreres. In this arena he can be found, whether essayist or leading in discussion partaking of debate, smoothing out the differences in dissenting opinions, adding to the luster of progress and of intellectual advancement. Every member of this Association, by his works and demeanor, is measured by the yardstick of the scholar. If by preference he abstains from classical and academic sessions he is the chief loser; while, indirectly, those he serves share a proportionate loss. If he is motivated by a genuine desire for knowledge, the reputation and credit of organized medicine enjoys a greater distinction and the tradition of physicians as scholars is warranted, vindicated and promoted.

Charles G. Dawes, a rugged American, a man of keen discernment, a speaker refreshing in frankness and above all else, a traducer of convention whether of speech, custom or fashion, has the following advice for members of a profession: "If you work in a profession, in Heaven's name work for it. If you live by a profession, live for it. Help advance your co-worker. Respect the great power that protects you, that surrounds you with the advantages of organization and that makes it possible for you to achieve results. Speak well for it. Stand for it. Stand for its professional supremacy."

THE PHYSICIAN AS STATESMAN

The physician as statesman presents a figure separate and apart from the scholar, although his stature as statesman becomes enlarged and the mirrored reflection is more gratifying when the completed picture is presented with a background of culture and education. In his capacity as statesman the physician correlates the humanities with progress, harmonizes vision with necessity, subordinates selfishness for collective interests and brings to the front a perspective comparable to and worthy to combat the mutations of time and of evolution. A failure to encompass such virtues leads to apostacy and reduces the doctor's mental and moral influence to such an ex-

tent that he scores but a paucity of glory in the fields of statesmanship.

This is pre-eminently an age of progress. The evolution during the last century has wrought complex changes. In the sweep of years the problems of government have become greater and most difficult. This is true and applicable not only to the important questions of taxation, finance, industrialism, but even more vitally to the problems of maintaining and protecting the health and general welfare of the people.

To meet these changes, to surmount these difficulties and solve these problems, during the onward cycle of the decades and generations, the highest courts of the land have, from time to time, broadened the meaning and scope of constitutional authority, especially with respect to the police power and welfare clause in both Federal and State organic laws. Police power is defined to be "the power inherent in a government to enact laws, within constitutional limits, to promote the order, safety, health, morals and general welfare of society."

So construed and enlarged, there have been given larger and broader powers to the legislative branches of government, with a consequent greater administrative field of activity. Under the inspiration and influence of such authorized broader authority and power lodged in Congress and in Legislatures, many laws have been passed to promote the safety, health, morals and general welfare of the people,—such as compulsory education, compulsory vaccination, hygienic and eugenic laws, child labor, pure food laws and narcotic laws. As a natural corollary and complement, both in the legislative and the administrative sense, the doctor of today has been called upon, nay, forced to broaden the path of his work. He can no longer confine himself to mere professionalism; restrict his activity and duties to the sick room and the hospital.

His professional knowledge, his conception of the needs and demands for better and more far-reaching laws to protect the people and preserve their health and happiness have made the able, skilled and well equipped doctor a potent and effective influence in the framing and passage of such laws referred to and in the establishment of administrative boards for the proper execution of such beneficent statutes.

Flowing from such impelling obligations thus imposed upon the doctor and as a result of his thus increased duty as a citizen to promote whatever is *pro bono publico*, his status in the community and State has relatively become more prominent and powerful for good in public affairs.

"Humanity never rises in the mass. It struggles onward, a few in the van bearing the brunt of the fight, while the great army follows after—often a long way after."

Although it may be declared that this is an age of commercialism, materialism, sharp competition and that selfishness motivates the conduct of men, yet it cannot be denied that with all our greed and selfishness, this is also an age of supreme enthusiasm for humanity—its elevation and its betterment. When the heart of our people is touched, it never fails to display a universal sympathy. There is no better proof of this exalted sentiment than the undisputed fact that the great majority have always, at the polls or otherwise, approved or sanctioned every law whose purpose was the betterment of the American people.

There was never a time when real leadership was more in demand than now. Never a more propitious hour for the membership of this Association to suppress greed and selfishness, to throw off the yoke of dissension, to cast aside the mask of hypocrisy, to abandon insincerity, to cement organized medicine in Alabama into a homogenous and potent factor. Ours is a moral obligation imposed by society which obligation is not to be billeted into warring camps, nor to be kicked about because of pleasure or displeasure, as the case may be.

The doctor has come to be a potential factor in alleviating the sufferings of mankind and in softening the asperities of life. This broader field has also found him already prominent in the legislative halls, in the Senate, at the head of great municipalities, on various and important administrative boards, etc. But his race is only half run, his story only half told and there is left for him in the future development and progress of this great Nation as much of public duty and responsibility as to any other professional class of citizens. Then, doctors, if they would maintain their allotted status in the affairs of the world, must be alert and retain their place in the vanguard socially,

religiously, professionally and in civic affairs. The patriotic doctor with high ideals and who puts himself down as one who loves his fellowman cannot, indeed, would not, ignore or escape this greater duty to mankind logically imposed upon him by his position in society.

An intrinsic phase of statesmanship is the perpetuation of moral fibre, the incorruptible assurance of dependability. Doctors, in their all inclusive services to mankind, must keep faith with their fellowman as practitioners and as leaders in medical thought. The statesmen in our ranks will not discourage by penalizing, will not encourage by fake rewards, they will not so deport themselves that their promises will bring fear to some, false hope to others and hesitation to all. Our battles cannot be deferred—they must be fought somewhere some time. We might as well accept the challenge to our leadership and of our responsibilities here and now. In measuring up to the standards of rugged and progressive statescraft perhaps such a course may entail stern readjustments distressing enough but not so painful in the give and take as the inequalities and injustices worked by arbitrary fiat. Such a curriculum would return an enduring compensation of self respect. The medical profession must preserve its time honored conception of reliability, of the sanctity of vows regardless of how rigid and exacting the course may be,—it must ever retain representation in the assemblies and chambers of statesmen.

As we proceed with the solution of our individual and collective problems, after the smoke of battle has disappeared, let us hope that no one within or without our ranks can have provocation to hurl the following at our leadership:

"And so I fear, My Country, not the hand
That shall hurl night and whirlwind on the land,
I fear not Titan traitors who shall rise
To stride like Brocken shadows on our skies,
Nor giants who shall come to overthrow
And send on Earth an Illiad of woe;
I fear the vermin that shall undermine
Senate and Citadel and School and Shrine,
The worm of greed, the fatted worm of ease,
And all the crawling progeny of these—
The vermin that shall honeycomb the towers
And walls of State in unsuspected powers."

This is my last opportunity to speak *ex officio*. Enthusiasm may have bordered upon vainglory. But what is life? In the words of a philosopher-writer "it is even as a vapor that appeareth for a little time and then vanisheth away." Fleeting as it is we must crowd into a brief span of years an abundance of effort and thought for our own participation and with a consciousness that succeeding generations thrive upon the works of men whose deeds live after them. No ambitions are too laudable, no sacrifices too supreme, no undertakings too herculean for us to face the morrow with abiding hope, resolute determination and a will to conquer.

In submitting this word portrait of the physician of this Association and of the mission of each, I close with this appropriate thought for every physician from an essay on "The Mystery of Life and Its Arts," by John Ruskin in which he discusses the preparation for life: "But we have to turn their courage from the toil of war to the toil of mercy; and their intellect from dispute of words to discernment of things; and their knighthood from the errantry of adventure to the state and fidelity of a kingly power. And then, indeed, shall abide for us an incorruptible felicity, and an infallible religion; shall abide for us Faith no more to be assailed by temptation, no more to be defended by wrath and by fear; shall abide with us Hope, no more to be quenched by the years that overwhelm, or made ashamed by the shadows that betray; shall abide for us, and with us, the greatest of these—Charity."

Nevi—Dermatologists of former days in their books advised very conservative treatment of nevi, giving many classifications and names to them. In recent years all have become aware that a melanotic cancer is about the most dangerous growth known in speed and certainty of killing power. Practically all writings in the past five years insist that a radical destruction is proper for a growing irritated mole and particularly for melanotic ones. For less dangerous ones a less violent procedure may suffice, particularly if disfiguring. I have seen such rapid death from innocent black moles subject to trauma or even radium therapy aimed at destruction, that I am suspicious of the whole family.—*Phillips, Texas State J. Med.*
April 1934.

ALLERGY AS THE DIRECT ETIOLOGIC FACTOR IN MALIGNANT GRANULOPENIA

A CLINICAL STUDY BASED UPON ONE FULMINANT CASE

By
EDGAR C. FONDE', M. D. and
G. H. FONDE', M. D.
Mobile, Alabama

It is submitted that certain principles in the interpretation of a symptom-complex developing under varying etiologic conditions may more readily be deduced from the study of a single case than from a greater number of cases which offer a greater complexity for consideration.

We wish to emphasize that it is from the clinical aspects mainly that we have followed and here report our findings in but one fulminant case of malignant granulopenia.

The case was in our own home, with anxious scrutiny constantly through day and night from the inception of the disease until convalescence. Therefore, this analysis and the interpretation as to its allergic character and the therapeutic problems involved were forced upon us; without choice we were brought to the impressions here presented.

Further, we wish it expressly understood that we do not regard our views, based upon one case, sufficient to settle the whole matter. Our main purpose is to appeal to others, who may have access to a greater number of cases, to verify or correct our findings both clinically and by laboratory and experimental measures; which are not easily within the reach of those, like us, who are in the field of clinical medicine with limited hospital opportunities for the speedy study of so rare a disease-complex.

Before proceeding we would quote from others whose opinions show the trend towards belief in the allergic nature of the disease. Also, we will present a sketch from the work of others as to the present views upon this disease, as follows: An article by Harkins¹ reports the judgment of a group of physicians of the Chicago University Hospitals based upon a study of thirty-six recurrent cases of granulopenia. Under their comments appears the state-

ment, "Primary granulopenia may be due to some endogenous factor as allergy." In the same article Dr. Perry Pepper of Philadelphia is referred to as believing that "the disease may have an allergic basis". Dr. Pepper may further be quoted in his writings as saying that he is greatly impressed with the frequency of an allergic history in subjects of granulopenia. We conceive it as also of allergic significance that the last circular contained with pentnucleotide (which is sponsored by the Committee on Nucleotide Therapy of the Harvard Medical School) claims an improved product recently, which has less tendency to dangerous shocks. In this circular they also omit the advice contained with their first product, pentnucleotide K-96, to give intravenous doses. The new circular recommends it only for intramuscular injection.

Under the caption "Diseases of the Blood" in Nelson's Loose Leaf Living Medicine², the distinguished reviewers, George H. Minot and Roger I. Lee, state that the term idiopathic neutropenia, or malignant neutropenia, is frequently used as a better term than agranulocytic angina, since (in reviewing forty-eight recent reports) throat lesions are common but not constant. Quoting further from this most authoritative article, "One extremely promising form of treatment is reported by Jackson, Parker, Rhinehart and Taylor. They injected a solution of pentnucleotide intramuscularly and intravenously. At the time of the report 20 cases of malignant neutropenia of varied etiology had been treated. In 14 of the 20 cases, recovery took place."

This excellent, terse and recent review of the subject states, "The future will unquestionably resolve this condition into many clinical and pathologic entities which show a similar reaction of the leukopoietic apparatus." Also, these reviewers state that Roberts and Kracke report that in a large series of blood counts (8,000) they found varying degrees of neutropenia, and they believe that agranulocytosis represents the most severe manifestation."

To make clearer the viewpoint here offered, in support of the allergic nature of

1. Harkins, H.: Granulopenia and agranulocytic angina, J. A. M. A. 99: 1132-1138, Oct. 1, '32.

2. Nelson's Loose Leaf Living Medicine: Diseases of the blood, a review by George H. Minot and Roger I. Lee, Service Volume, pp. 271-2, Nov. '32.

our case, we must quote the basic explanation as to the nature of allergy given by Dr. Arthur F. Coca who states: "During the past twenty years we have witnessed the rapid growth of a new medical specialty which is based upon the newly recognized principle of the causation of disease. This principle lies in the surprising paradox that antibodies, which had previously been known to medicine chiefly as protectors against disease, often represent the actual cause of disease."³

Briefly stated, an allergic patient *stores up* too many antibodies. These are not stored up in the humoral tissues, as the plasma, but in the allergic sensitized subject the antibodies are stored up within the colloidal structure of the fixed-tissue cells (called by Coca "shock-tissue"). The location of this "shock-tissue" would seem to determine one or the other type of clinical phenomenon. It is important to bear in mind that the reaction between the antigen and the antibody in the blood stream, or in the humors of the body, would cause no shock of allergic nature. On the contrary, such bodies in the circulating fluids would guard against just such shock. However, when fixed-tissue cells contain the antibodies in their colloidal structure, due to former exposure, and sufficient time has elapsed to allow of disappearance of the protecting antibodies from the circulating fluids, then the re-entry of the former allergen (or anaphylactogen) would occasion shock in degree of the sensitization, with release also of an histamine-like substance (Rakeman).

CASE REPORT

Onset of attack September 24, 1933. The patient was ready to leave on the midnight train. About 11 P. M., and when planning to check his baggage, he suddenly felt very ill with marked aching over the body and limbs. This caused him to slouch into a chair and say he was more ill than he had ever been. His departure was cancelled. There was much prostration. He retired feeling much depressed, restless, apprehensive, and constantly groaning. He was very ill and repeatedly reiterated that he was sicker than he ever had been. About midnight, an hour after the seizure, he had a severe chill lasting an hour. Temperature

was taken as soon as the chill was over and was 99.8.

1st Day—September 25th: He was given one grain of calomel. He continued to be chilly through the night. At 6 A. M. the temperature was 100.6. Blood specimens were taken for smear, for Bass-Johns concentration test for malaria, and for the Henri test for malaria. No blood count was made. Report negative for malaria. As the patient was averse to Epsom salts, phosphate of soda in hot water was given 2 hours apart for three doses. The bowels moved in the early afternoon, when 10 grains of quinine at 4-hour intervals for three doses were started. His spleen was not palpable at this time. Quinization did not result after the 30 grains. This was attributed to portal congestion and lack of absorption. The temperature at 6 P. M. was 103.8 and at midnight the patient had another hard chill.

2nd Day—September 26th: Blood was taken at 8 A. M. and reported as follows: White blood cells 4,700, neutrophils 29, small mononuclears 57, eosinophiles 5, large mononuclears 11; slight left shift in neutrophils; embryonic type of mononuclears; (we then first became suspicious of the granulopenic syndrome). Malaria negative. Quinine was continued, 20 grs. being given during the day. The temperature ranged between 101 and 103. About 6 P. M. patient first complained of sore throat. He described the pain as being "deep down in the neck". The throat revealed relatively little. There was a peculiar fullness in the submaxillary region and at the root of the neck. The carotid pulsations were quite marked. Prostration was extreme. A rough, almost musical systolic murmur heard in the 2nd right interspace and transmitted to the great vessels of the neck was distinctly audible; the second sound was prolonged; a Corrigan pulse was present. A blood count at 8 P. M. showed white blood cells 3,200, polymorphonuclears 23, small mononuclears 71, eosinophiles 1, malaria negative. Spleen was questionably palpable. A blood culture was taken (with typhoid in mind). The agglutination tests for typhus, typhoid, undulant and tularemia were made. All were later reported negative. During the day the patient had had chilly sensations quite frequently. There were no symptoms of quinization at the end of this day.

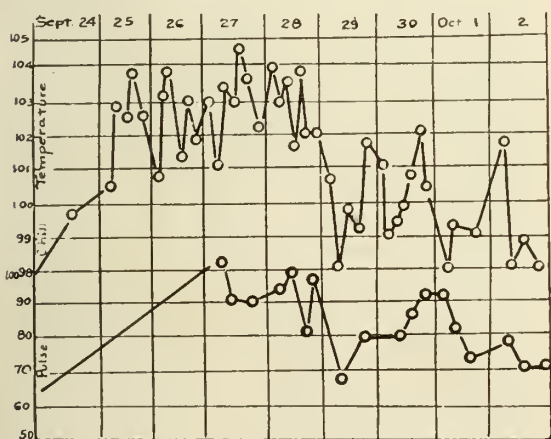
3rd Day—September 27th: Morning temperature was 101. There was more fullness about the neck, more prominent carotid pulsations, more complaint of sore throat and more prostration. A blood count was taken and before it was reported 11 grains of quinine, diluted with 300 cc. of saline solution were given by slow drip intravenously (at 8 A. M.). The lowest report for the day from specimen prior to giving the quinine was white blood cells 1,200. No neutrophils (one fragmented one was noted), small mononuclears 99, eosinophiles 1; platelets decreased. (Note this was the third day and 58 hours from the chill with complete absence of granulocytes). Red blood cells 4,100,000, hemoglobin 75%; group IV Moss. At 10 A. M. ten cc. of pentnucleotide were given. *From the very beginning of the injection the patient showed violent shock and complained of the tension-like pain in his abdomen and a peculiar feeling in his head;*

3. Coca, A. F.: Classification of allergic diseases, with reference to diagnosis and treatment, J. Lab. & Clin. Med. 18: 219-224, Dec. '32.

sighing, dyspnea, and bradycardia were marked. The immediate shock while yet giving the pentnucleotide intramuscularly was noted with much concern and we began to suspect it was an allergic shock. Also the patient bitterly complained and expressed fear of the injection killing him. Three hours after the injection the patient's blood pressure was 125/0. Throughout the day the temperature ranged between 101 and 105. The pulse was rarely over 100, a peculiarly constant finding throughout his illness. There had been some vomiting the previous day with little nutritional intake. The patient was given lactose, buttermilk and orange juice, every two hours. Sodium perborate (mouth wash and gargle) was administered every two hours while the patient was awake. About four hours after the first pentnucleotide injection the patient complained of precordial distress; he was very restless, dyspneic, and perspiring profusely; his pulse was very slow with many "dropped beats"; he was somewhat distended. We determined to adopt desensitizing principles as nearly as possible without departing from the

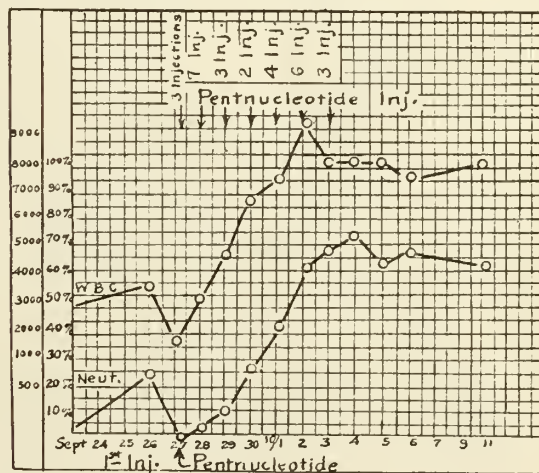
highest was 4,100; the blood cells seemed to have more tone.

5th Day—September 29th: In an attempt to prevent the immediate shock from pentnucleotide at 5:30 A. M., 12 cc. of it were diluted in 100 cc. of saline solution and given by intramuscular drip for one hour. There was no immediate shock as would indicate an allergic character. By this method the dosage of 40 cc. a day could be given, the patient being disturbed and needled only four times in 24 hours. It should be explained, however, that we then considered that the preceding shocks had brought about considerable desensitization. We began to feel safer in giving the stipulated daily dosage. The delayed reactions, 4 or 5 hours after the injection, we regarded as not allergic and they were unquestionably milder. On this day the patient received 32 cc. of pentnucleotide. Four counts were done: Neutrophils high at 18, but at 10:30 A. M. they had dropped to 10; total count high at 4,900; at 5 P. M. neutrophils 24, myelocytes 4. The polymorphonuclears all show a granular appearance, and have a deep blue color. The myelo-



daily dosage advised by the Harvard Committee. At 8 P. M. two cc. of pentnucleotide were given and the same adrenalin-like reaction noted (adrenalin-like in respect to violence and great suddenness). At 10 P. M. four cc. were given. And from that time to daybreak the patient appeared to be in a critical condition—(reaction 4 hours after the 8 P. M. injection, which was not regarded as allergic).

4th Day—September 28th: This morning the patient complained a great deal of pain on swallowing. The throat showed ulcerations on each side of the posterior pharyngeal wall the size of one's finger nail. The shooting pains in the ears were more severe. On this day pentnucleotide injections were given as follows: At 11 A. M.—6 cc.; 3 P. M.—1 cc.; 3:30 P. M.—1½ cc.; 6 P. M.—1 cc.; 6:30 P. M.—2 cc.; 8 P. M.—4½ cc. Patient spent a very restless night, complaining of precordial pain, (blood pressure 115 over 20), dyspnea, abdominal pain, perspiring freely, skin cold and clammy, pulse weak and irregular. We regarded the condition as due mainly to the repeated allergic shocks, and the condition critical. More blood counts were done. The average picture was as follows: Neutrophils 2, myelocytes 1, of the total counts the



cytes contain vacuoles. On this day the temperature fell from 104, by crisis, to normal. (Note a specific effect by crisis at the end of three days after the first dose of pentnucleotide).

Since the above record, blood counts were taken once or twice a week and always found to be normal except for the myelocytes, which at times were as high as 8%, and eosinophilia 2-5%. The blood pressure has improved to 120/60, but the heart still gives harsh systolic murmur, transmitted to the great vessels of the neck, with prolonged second sound. Corrigan pulse still present.

Previous History

The Family History: Both parents are definitely allergic, the father having suffered most severely with pollenosis, hay-fever and major type asthma. The father had enjoyed a natural immunity for thirty years. He had had hay-fever and asthma with recurrent seizures of confluent rhus poisoning frequently from infancy to sixteen years of age, at which time he moved from the country to the city. From this time onward the natural immunity was enjoyed. He then visited the moun-

tains in the ragweed pollen season. Within two weeks severe hay-fever and intense asthma resulted; also the patient's sister, then 3 years of age, developed the same severe allergic suffering. This is explained by the authorities on the subject as an exposure to a density of pollen beyond the acquired tolerance and such pollen cases are advised to avoid visits and travel during the ragweed season. Both these patients had responded well to desensitizing treatments. The mother of the patient had long suffered with milk sensitization, and we believe also wheat sensitization. The elder brother has had transient and most severe attacks of moist eczema of the external ear from food allergy.

The past medical history of the patient is good. There have been no serious illnesses; none that caused him to go to bed, but for the past two and a half or three years the patient has been subject to recurring attacks of abdominal pains which had caused considerable anxiety, appendicitis or some septic condition being feared. He was repeatedly re-examined thoroughly both at home and while away at college. The pains were finally considered as due to allergic sensitization to malaria, as well as to certain foods. This we were able to conclude after intensive study at home in a number of recurrences. Aestivo-autumnal parasites were demonstrated twice within the two and a half years. The malarial seizures always responded to quinine without more than slight inconvenience. However, the follow-up treatment was neglected by the patient. The blood findings were as a rule negative except for a constant finding of eosinophilia of 2-5%. The patient gave the history that dentyne gum invariably caused him to promptly have quite a sore throat. This was demonstrated to us.

A very important point, we consider, in the history is the fact that, prior to an European voyage and to the granulopenic seizure, the patient was observed to sit at a table with his plate served very bountifully to eggs and ham. He was late and therefore was especially observed while eating alone. He seemed to halt as if with a shudder, somewhat as an alcoholic will do when the strong drink is in hand. Upon being asked what was the matter, he shook his head and said that a supper like that had made him awfully sick one night, and he was ill all night; that this was at his "training-house" for athletics, when he ate one or two dozen eggs with ham. Otherwise the family history is negative.

During the past summer the patient had "shipped out as a workaway" with a group of fellow classmates on a trans-Atlantic freighter. It is notable that during the greater part of this voyage he suffered severely with many furuncles. These were improperly treated (not drained) and all the while the patient worked very hard and suffered much. Shortly after his return home the furuncles disappeared, following two injections of staphylococcus toxoid. A strikingly peculiar appearance of the tongue has drawn our attention for the past two and a half years. It is the type rather well described as geographic.

Within a week of the onset of the fulminant malignant granulopenia the blood was examined because of the marked abdominal pains. It merely

showed each time an eosinophilia of 5 to 6%. The patient just prior to the onset of the seizure had the appearance of an unusually athletic and healthy young man.

COMMENTS

In view of the close-up clinical and cytologic findings in this case, and then the undoubted critical shock-effect upon the injection of pentnucleotide, we feel convinced first, that the case was one of anaphylactic shock which took place within the myeloid cells of the bone marrow; and, secondly, that the sensitization had developed from the nuclear degradation products as traced successively in the hereditary tendency; in the over-exposure of the myeloid cells to successive overloads of nuclear split-products in the ingestion of egg white, in mass destruction of granulocytes due to malarial toxic damage; by mass destruction of the same cells in the neglected furunculosis; and, third, after lapse of time permitting disappearance of buffer effect in the blood stream, the reintroduction of the anaphylactogen resulting from malarial recurrence.

Acting upon this interpretation and receiving no encouragement after writing to a number of authorities on this disease as to measures for preventing the dreaded and fatal recurrence which has marked many of these cases, we seized upon the plan of utilizing pentnucleotide for the antigen in very gradual desensitization, and to accomplish a presence of antibodies in the circulation to act as a buffer against recurring overwhelming allergic shocks from such causes as hypothecated above. Although this was determined upon promptly, it was not to be put into effect for a time until the shock-tissue of the subject would again become reactive to the allergen. To illustrate the line of thought: According to Coca one sensitized to several foods of which one food is the dominant allergen would not be allergically shocked by the less dominant ones until the time of recovery of the shock-tissue. So that not until the same uncertain tone and disturbances recurred from ingestion of eggs did we begin the very gradual desensitizing method. This was begun exactly three months from the seizure of the granulopenic attack. The first administration was the usual subcuticular test. There was a definite positive reaction within ten minutes, with highly raised blanched area

and pseudopods, with very large area of redness, which remained several days. Upon subsequent slowly raised doses these areas would fade and reappear, and would often show a peculiarly concentric appearance. This we reasoned as the various nuclear split-products in the pentnucleotide, analagous to the various globulins in the successively recurring rashes after serum sensitization, although we do not claim knowledge as to the exact nature of pentnucleotide. The desensitizing treatments lasted from December 25th to February 25th during which time we had the patient on a diet which eliminated eggs. It was then determined to have him eat eggs in order to measure, as it seemed we might, his tolerance to "nuclear degradation products". Not only was he enabled to eat eggs but to eat several a day *without any disturbance whatever*. Also it was noted by the patient and commented upon voluntarily by him, that he had a clean tongue and felt comfortable in his mouth as had not been the case in years. The geographic tongue had disappeared, and with it all of the frequent set-backs and discomforts connected with his digestive system, the nervous shocks and restless nights. The transformation in him was constantly remarked upon by those who had before anxiously observed him. It is most instructive to report that while first on the diet eliminating eggs, after the lapse of ten days, he inadvertently ate egg in a salmon croquet. Within a few minutes he complained of the stomach distress, and the night following he was restless and complained of his liver. Upon questioning the cook on the following day we learned that she had rolled the croquet in egg white in order to attach the flour for "browning". A couple of days after this the patient was noticed to place a marshmallow in his mouth, and was immediately checked by the remark that it had eggs in it (egg white). He spat it out, and rinsed his mouth, but evidently some of the egg white had touched the stomach, since he soon had the sensations again which he had before, although in the small amounts ingested we are sure he had a shorter period of discomfort but not less distress in the short period.

We would now submit for consideration three sets of questions and answers in regard to acute granulopenia:

1st Question: Is the direct etiologic cause merely an ordinary damaged condition which may arise from the many causes as reported—x-ray over-exposure, bacterial toxins injected or from infection, arsphe-namine injections, other chemicals injected and otherwise taken into the system, as benzol, benzol inhalations, benzamine drugs, overloads of foreign protein, typhoid vaccine; and, lastly, toxemia of the menstrual cycle, as reported in the follow-up of a group of nurses who had recovered from an attack of agranulocytosis?

Answer: No. We submit that such a disease-complex as judged clinically and as judged by the abrupt blood changes would occur far more constantly than they do if all of these agents were direct causes. Myriads of cases would result from these agencies and yet the disease is rare. However, these factors are valuable in safeguarding against leucocytic destruction and consequent endogenous formation of mass nuclear or the leukocytic degradation products which is the direct cause.

2nd Question: Is the disease definitely an allergic disease?

Answer: Yes. As definitely allergic as ragweed pollen sensitization or as migraine seizures from food sensitization shocks; and as clear cut as the dangerous and sometimes fatal shocks from intracutaneous skin testing for the specific allergen in highly susceptible or allergic-sensitized cases. We are warned to have at hand the tourniquet and the adrenalin and to hold the patient under observation for half to one hour or longer in case of positive reactions.

We do not wish to extend this answer but it should be of interest to point to another striking parallel in the well known hemolytic crises in malarial history. The patient has been subject to mass destruction of the erythrocytes from the malarial infection. Suddenly there develops an allergic hematuria. In the sudden red cell hemolysis the degradation products apply to the red cell destruction to which the subject becomes sensitized by *over-exposure*. The specific causal agent is the red cell degradation products (now the allergen) to which the subject is sensitized, resulting in wide destruction of red cells and accounting for the recurrences occurring abruptly with the release of the said degradation products.

3rd Question: Is malignant granulopenia a new disease entity in the category of diseases, in which the specific causal agent is yet to be determined?

Answer: Yes. A new disease entity which has been separated from a group of septic conditions and blood dyscrasias of the past. The specific causal agent is nuclear degradation products, in the case reported.

In explanation of this hypothesis in regard to the degradation products in excess amount inviting sensitization, we would state that it is builded upon the very sound hypothesis set forth as follows by Charles A. Doan⁴: "The reasoning based on experimental and clinical data by which the degradation products of senile and disintegrating cells are seen as an integral part of the normal mechanism for maintaining cellular equilibrium, etc. In the normal individual these nucleotide products are present in minimal quantities in the circulating blood." Note that these products "present in minimal quantities" bring the normal response. Our view is that in *excessive amounts*, especially in the subjects of atopic heredity, the over-exposure to the foreign-acting protein would invite sensitization—would then become the specific causal allergic agent, as in the overtax of tolerance in ragweed pollinosis and other allergic diseases.

In further support of our view-point, this hypothesis conforms to the views by Von Bergmann as stated in an abstract (Journal A. M. A. from Medizinische Klinik, Berlin, 29: 1395, by Deutsch and Weiss) of "Autocomplement Titer and Allergy", as follows: "Von Bergmann's definition of allergic disorders stresses the significance of endogenous allergens". The article abstracted further offers new serologic methods for the determination of the allergic character of a syndrome.

To recapitulate the factors envisaged in the case:

(1) A subject of atopic or allergic heredity.

4. Doan, C. A.: Neutropenic state; its significance and therapeutic rationale, J. A. M. A. 99: 194-202, July 16, '32.

5. Deutsch, F., and Weiss, E.: Clinical significance of autocomplement titer: contribution to allergy problem, Med. Klin. 29: 1402 (Oct. 13) 1933; abstr. J. A. M. A. 101: 2207 (Dec. 16) 1933.

(2) Sensitization to nuclear degradation products successively from ingested egg white, from nuclear degradation products formed in the blood stream in malarial toxemic seizures, and in the *mass amounts* of such products from the neglected and prolonged furunculosis.

(3) The retention of antibodies within the colloidal structure of the fixed tissue cells in the bone marrow (the characteristic tendency of subjects of atopy).

(4) The time element for removal of the antibodies in the circulating plasma.

(5) A recurrence of the allergen through return of malarial destruction of white cells. And, as a consequence, the anaphylactic shock equalling malignant granulopenia and agranulocytosis of fulminant type.

Finally, let us state, that, while awaiting the boon of exact and full knowledge, the clinician, with his back to the wall, must endeavor to meet the grave significance of the granulopenic blood picture; must meet by early diagnosis the oncoming malignant septic infections; and early, and even boldly and hurriedly, promote desensitization of the bone marrow cells, which are the source of granulocytic defenses. Rational medicine demands seizing upon the best choice in even slighter trails thus far developed in the management of these cases.

SUMMARY

We have presented the following:

(1) A study of one fulminant case of malignant granulopenia from close-up presence with the patient night and day from the inception stage to convalescence mainly from the clinical aspects.

(2) The observation which forced the conviction of the allergic nature of the disease; which, in turn, forced the adoption of the use of pentnucleotide under the principles for desensitization.

(3) Views as to the *modus operandi* in the development of the sensitization, through nuclear degradation products formed first of egg white taken in excess; and then successively, the degradation products of leucocytes destroyed by malarial toxemia, by severe furunculosis; and finally, again, by the malarial destruction of leucocytes—the specific causal agent being the degradation products of nuclear cells.

(4) This hypothesis supported by references to analagous factors in other allergic conditions, as in sensitization to rag weed from over-exposure, as in migraine to the food allergen of the case, and finally, and more nearly parallel, as in sudden red cell hemolysis in hemolytic malarial cases.

(5) The adoption of the very gradual desensitization with pentnucleotide for safeguarding against recurrence of major shocks from nuclear split-products—as in other allergic cases—with the resulting very marked relief and great tolerance to egg white, where before there was intolerance.

801-2 Annex First National Bank Building.

SUCCESSFUL REPAIR OF STENSON'S DUCT

A REPORT

By
R. C. Hill, M. D.
York, Ala.

This patient, a Negro man about 25 years of age, came to me at 11 P. M., December 29, 1933, for treatment of stab wounds of the face and scalp. One wound on the right side of the face began over the zygoma opposite the tragus and extended downward and backward toward the angle of the jaw. The parotid duct was cut and the gland incised. The important branches of the facial nerve were not injured.

The cut ends of Stenson's duct were located. An end-to-end anastomosis was made with three equidistant sutures of No. 00 plain catgut. (This was the only small suture available at the time). The fascia about the duct was brought together with No. 2 chromic catgut to relieve tension. The wound in the gland was sutured with this same material. The skin was closed with silk. A small rubber drain, placed near the duct and brought out at the lower angle of the wound, was removed in 24 hours. A small salivary fistula persisted for 10 days, then closed spontaneously. At the present time, March 1, 1934, the wound remains healed and saliva can be seen emerging from the mouth of the duct.

The other wounds of this man were also interesting. One began just lateral to the outer canthus of the right eye, incised the upper lid along the line of the lashes for

1/4th its length. Then the knife entered the lower lid on the conjunctival surface, incising it deeply and ending on the skin side near the inner canthus. The eyeball was not injured. Another stab wound with this knife was in the right parietal region near the median suture. The skull was fractured, causing a left hemiplegia. A craniotomy was done in the patient's home on the second day of the injury. These wounds healed uneventfully, and the paralysis continues to improve.

Advisory Board for Boards Certifying Specialists—Announcement is made of the formation of the Advisory Board for Medical Specialties, previously referred to editorially in *The Journal*. The purpose of this advisory board is to coordinate the activities of the various official groups already concerned with postgraduate medical education in the specialties, and to standardize their methods of work and the certification of medical specialists by the existing examining boards.

It is composed of representatives from the following groups: the Association of American Medical Colleges, the American Hospital Association, the Federation of State Medical Boards of the United States, the National Board of Medical Examiners, the American Board of Ophthalmology, the American Board of Otolaryngology, the American Board of Obstetrics and Gynecology, the American Board of Dermatology and Syphilology, and the American Board of Pediatrics. Examining boards in other specialties may be eligible for representation on this board on meeting certain high standards of qualification.

The officers are president, Louis B. Wilson, Rochester, Minn.; vice president, J. S. Rodman, Philadelphia; secretary and treasurer, Paul Titus, Pittsburgh; members of the executive committee, W. P. Wherry, Omaha, and W. B. Lancaster, Boston.

The Advisory Board for Medical Specialties should have an important influence on undergraduate medical education as well as on graduate education in the specialties. It will assist in the active investigation and listing of postgraduate training facilities both in the United States and in Canada, and to a lesser extent abroad, much of which has already been done in this country by the Council on Medical Education and Hospitals of the American Medical Association. It should be an important influence in effecting a general improvement in the standards of practice in the various specialties.

It is expected and planned that the Advisory Board for Medical Specialties will be reportable to and work under the general direction of the Council on Medical Education and Hospitals of the American Medical Association.

The next meeting of the Advisory Board will be held in Cleveland, Sunday, June 10, or immediately prior to the next annual session of the American Medical Association.—*J. A. M. A. April 21, 1934.*

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May 1934

THE 1934 ANNUAL MEETING

The 1934 annual meeting of the Medical Association of the State of Alabama has just passed into history with Birmingham, as always, serving as the charming and inimitable host, and Dr. James R. Garber, also of Birmingham, serving in a most efficient manner as President and master of ceremonies. The experiment recommended and adopted in 1933 to shorten the time period of meeting from four to three days proved most gratifyingly successful.

Another unique feature of this annual meeting was the pre-convention gathering held on Monday in Tuscaloosa, where the members were handsomely cared for as the guests of the Tuscaloosa County Medical Society, the Bryce Hospital, the Medical Department of the University of Alabama and the Veterans' Hospital. This occasion presented an exceptional opportunity for the members, not only to revel in the historic and scenic beauties of Tuscaloosa but also to acquaint themselves with the important and interesting activities being conducted there by our State and the Federal Government. For this happy thought the President is to be commended and for the execution of a carefully arranged program, the Tuscaloosa County Medical Society to be graciously thanked.

Another interesting feature of this meeting were the contributions made by Drs. Fishbein and Leland of the American Medical Association and by Dr. Bert Caldwell of the American Hospital Association, bringing to us the broad, nation-wide concepts on medical and socio-economic problems. The public meeting of Wednesday evening, at which Dr. Fishbein was the sole speaker of the occasion was exceptionally well attended. He held his audience spellbound for more than an hour as he portrayed to them, in rapid, humorous and kaleidoscopic fashion, how the present day mechanised methods of living were reacting upon medical practice.

The Jerome Cochran Memorial Lecture, always the outstanding scientific feature of each annual gathering, was contributed by Dr. Russell L. Cecil, now of New York, but who is a Southern product, having spent many of his boyhood years in Alabama. In this discourse Dr. Cecil dealt with the latest scientific and experimental work which has been done on arthritis and rheumatic disease, to which he, himself, has been a prominent contributor. The presentations given by Dr. J. R. McCord, Professor of Obstetrics in Emory University, and Dr. J. A. Myers, Associate Professor of Medicine in the University of Minnesota Medical School, other distinguished out-of-State visitors, also marked high points in the scientific features of the program. The variety and scope of the many medical topics presented by the local profession of the State combined to give a program of exceptional attractiveness to all.

Particular commendation is due the Vice-Presidents, and all of the five standing committees for the exhaustive and comprehensive reports submitted. These reports showed that much time and labour had been expended and through these efforts many important questions were presented and discussed. It is to be hoped that this splendid beginning will be continued throughout the coming year and that every co-operation and aid will be given to their work.

No description of this meeting would be complete without mention being made of the unusual interest displayed and the splendid work done by the Woman's Auxiliary. The doctor's wife is beginning to appreciate the fact that she may be a help not only to

her individual spouse but likewise make important contributions to the many social and civic problems in which he is so vitally interested.

The entertainment and social features were by no means slighted and were nicely interspersed so as to break the monotonous swing of scientific deliberations.

But one regrettable note was sounded throughout the entire meeting; Dr. W. D. Partlow, who, for so many years has served the Association as a member and Chairman of its Board of Censors, because of the pressure of his other official duties, felt constrained to resign from the Board. With deep reluctance on the part of every member of the Association, this resignation was accepted and Dr. George H. Searcy, of Tuscaloosa, was elected to fill the unexpired term of Dr. Partlow. The Association may feel with certainty that Dr. Searcy will prove a worthy successor and that Dr. Partlow's long experience and training in the workings of our Association may still be utilised in unofficial ways. To fill the two vacancies on the Board through expiration of terms of service, Drs. Lloyd Noland, of Birmingham, and Dr. J. D. Perdue, of Mobile, were elected for a period of five years. The Presidential honour was bestowed upon Dr. Wm. M. Cunningham, of Jasper, a life counsellor, and Dr. W. M. Salter, of Anniston, was re-elected a vice-president.

J. N. B.

THE ETIOLOGY OF PRIMARY GRANULOCYTOPENIA

In 1922 when Schultz described the syndrome variously known as "agranulocytosis", "agranulocytic angina", and "primary granulocytopenia", he suggested that it might be due to the depressant action on the bone marrow of an unknown micro-organism or of an equally unknown chemical agent. Extensive search for an organism capable of producing this condition has met little success, but recently there has been increasing evidence which indicates a possible chemical etiology.

Kracke¹ observed that eight of his nine patients with primary granulocytopenia had

taken drugs of the coal tar series prior to the onset of illness. Madison and Squier², working independently of Kracke, and at first unaware of his work, made the same observation. Thus do these two investigators describe their first case: "In November 1931, while we were observing a patient with primary granulocytopenia, we noted a sudden unfavorable change in the granulocyte level, which had been showing a satisfactory response. The granulocytes decreased abruptly, with a marked shift toward immaturity, and the patient became more toxic. Careful analysis disclosed the fact that he had been given a sedative dose of a barbituric acid derivative on the evening preceding granulocyte decrease. We restricted the use of all drugs except opiates and after a rather stormy course he recovered. We later found that immediately preceding the onset of the illness he had taken allonal (allylisopropylbarbituric acid with amidopyrine) and that for some time previously had been in the habit of taking that drug frequently for restlessness and insomnia." Shortly after this they saw a patient whose history was practically a repetition of the above and "these two cases so emphasized in our minds the importance of drugs in this disease that we have studied this relationship in all cases seen subsequently". They now have a series of fourteen cases of primary granulocytopenia and "in each of the fourteen cases there was a definite history of the taking of amidopyrine in combination with a barbiturate, amidopyrine alone or, in one instance, in combination with other drugs, immediately prior to the clinical discovery of the granulocytopenia". The drugs used were allonal, sodium amytal, amidopyrine, neonal, phenobarbital, and amidophen. And, of the fourteen patients, eight are dead.

The authors point out "that primary granulocytopenia is a relatively new clinical syndrome. Although a few apparently authentic cases preceded Schultz's description in 1922, it is only since that time that the disease has attracted wide attention. We do not believe that the small number of cases reported prior to that time was due to diagnostic error, for the blood picture is so

1. Kracke, R. R.: Experimental Production of Agranulocytosis, *Am. J. Clin. Path.* 2: 11 (Jan.) 1932.

2. Madison, F. W. and Squier, T. L.: The Etiology of Primary Granulocytopenia (Agranulocytic Angina), *J. A. M. A.* 102: 755 (March 10) 1934.

characteristic that it could scarcely be overlooked". There are now more than five hundred cases on record, mostly reported since 1927 and "that period of rapid increase coincides almost exactly with the increase in the use of drugs containing a combination of amidopyrine with a barbiturate".

The above reports are too recent and the number of cases yet too small to permit the drawings of positive conclusions. But the work of Kracke, Madison and Squier will certainly strengthen the contention of those who advocate that the barbiturates and the stronger synthetics be sold only when prescribed by physicians.

W. W.

THE FEE-SPLITTER AND THE ABORTIONIST

Appearing immediately below is a copy of a resolution introduced by Dr. Harris and adopted by the Association at its recent meeting, which directs attention to the pernicious practices of fee-splitting and abortion. The purpose sought to be accomplished by this resolution is the awakening of interest among both the members of the medical profession and the public as to the far-reaching dangers inherent in both practices and the need for an aroused public conscience in an effort to curb them. That activities on the part of the abortionist, both within and without the orthodox fold of medicine, are on the increase seems quite certain and may likely be explained, to an extent at least, as one of the ugly by-products of the depression. The same may be said of the degrading practices of fee-splitting.

Sections 5192 and 5193 of the Code of Alabama and to be found at page 143 of the "Compend" deal with fee-splitting and the penalty therefor. The question of criminal abortion is severely dealt with in certain other sections in the criminal code. The resolution provides that copies of these sections be sent by the Secretary of the Association to each licensed practitioner in the State, to county medical societies and certain legal officials charged with the enforcement of existing laws. This matter is of such importance as to claim serious consideration at the hands of the entire profes-

sion and to be made a topic for discussion at the meetings of county medical societies.

J. N. B.

A RESOLUTION

Introduced by Dr. Seale Harris and Adopted by the Association April 19, 1934.

Whereas, The vicious practice of fee-splitting seems to be spreading, though the great majority of the members of the Medical Association of the State of Alabama are above buying and selling patients; and

Whereas, There are a few criminal abortionists who wantonly commit fetal murder in Alabama; and

Whereas, Fee-splitting and fetal murder are criminal offences according to the laws of Alabama, punishable by fine and imprisonment;

Therefore Be It Resolved:

1. That the Medical Association of the State of Alabama instruct its secretary to send copies of the State laws relating to the crimes of fee-splitting and fetal murder to each physician licensed to practice medicine in Alabama.

2. That copies of these laws also be sent to the solicitors and criminal court judges in each county in Alabama, requesting them to confer with members of the medical profession relative to the enforcement of laws against fee-splitting and criminal abortion.

3. That copies of these laws be sent to the secretaries of each constituent county medical society of the Medical Association of the State of Alabama, with the suggestion that the Board of Censors consider the punishment by the society of, and where sufficient evidence is available institute criminal charges against, physicians who are known to be guilty of buying or selling patients, or who can be proved guilty of criminal abortion.

Are More Doctors Needed?—Since all students of the question agree that the rate of increase is diminishing and that the country is tending toward a stable population, it is evident that the medical profession is increasing faster than the general population and that, unless the states promptly initiate measures to restrict the number of those licensed to practice medicine, a great surplus of unemployed doctors will become apparent—J. A. M. A. April 28, 1934.

DEPARTMENT OF PUBLIC HEALTH

BUREAU OF ADMINISTRATION

J. N. Baker
State Health Officer in Charge

THE ATLANTA CANCER CLINIC, GEORGIA BAPTIST HOSPITAL, ATLANTA, GEORGIA

The following excerpt from the Fulton County Medical Bulletin (Atlanta being located in Fulton County) seems timely, when taken in connection with the recommendation made to our Association by the State Committee on Cancer at the recent meeting held in Birmingham for the need of better diagnostic facilities. A perusal of of the Board of Censors' report on this problem reveals that it was the sense of the Board and of the Association that a solution of this phase of the question could best be approached and worked out by the local profession of the county societies in which the larger cities are located.

A study of the clipping given below reveals that this was the approach made by the physicians of Fulton County:

The Hospital Commission of the Georgia Baptist Hospital, at a meeting Friday, February 23rd, 1934, authorized the establishment of The Atlanta Cancer Clinic for pay patients.

The Clinic will have its quarters in the Medical Building, of the Hospital, as soon as necessary changes can be effected.

A weekly conference of the Clinic Staff will be held for diagnosis and outline of treatment. All legally qualified physicians are invited to attend and participate in these conferences.

A diagnostic fee, commensurate with the patient's circumstances, will be charged. These fees will be used for maintenance of the Clinic. Following the conference a written report giving the diagnosis and recommendation for treatment, will be sent to the patient's physician. Treatment may be obtained at the Georgia Baptist Hospital or elsewhere at the discretion of the attending physician.

Dr. James L. Campbell, who has devoted many years to the study of cancer, has been elected by the Hospital Commission as Director for the Atlanta Cancer Clinic. The Clinic Staff will be separate from the regular Hospital Staff. The officers elected for the ensuing year are Dr. T. C. Davidson, President; Dr. J. J. Clark, First Vice-President; Dr. M. T. Benson, Second Vice-President; and Dr. Howard Hailey, Secretary.

The Clinic will have 527½ milligrams of radium element available which is more than the minimum requirement, 200 milligrams, of the American College of Surgeons. Dr. O. D. Hall, who has specialized in the use of radium for a number of years, will be available for consultation.

The latest type of deep x-ray therapy machine has been installed within the last year and is operated by Dr. W. F. Lake, who is one of the outstanding roentgenologists in this section.

Surgery remains the foremost weapon against cancer, and many of the outstanding surgeons of Atlanta, are on the Clinic Staff.

Every applicant for admission to the clinic must be accompanied by, or bring a letter from, his or her physician. In case they haven't a physician, a signed statement to that effect will be required.

—Fulton County Medical Bulletin.

BUREAU OF LABORATORIES

James G. McAlpine, Ph. D., Director

GONOCOCCUS REPORTS

The function of any public health laboratory is to furnish additional information to the attending physician as to the presence or absence of the etiologic factor of any specific infectious disease. In the words of the late Dr. Leon C. Havens, "it must always be remembered that the laboratory can never make the diagnosis nor should it aspire to. The evidence obtained from any laboratory test or examination constitutes a part, and only a part, of the clinical picture. The physician, himself, must then assemble the evidence from all sources, the interpretation of which then leads to the diagnosis".

In line with this policy it has been considered advisable to change the form for reporting the results on smears examined for the presence of gonococci. These forms, a copy of which is given below, will be available for distribution at an early date.

"In the specimen from.....,
Patient's name
....., received
Lab. No. Date
examination showed:

Gram negative *intracellular* diplococci resembling morphologically the gonococcus.

Gram negative *extracellular* diplococci resembling morphologically the gonococcus.

No Gram negative diplococci found resembling the gonococcus.

Pus cells were present.

INTERPRETATION OF RESULTS

1. *Gram negative intracellular diplococci.* In a case where there are clinical findings of gonorrhea a smear which shows gram negative intracellular diplococci may be considered confirmatory.
2. *Gram negative extracellular diplococci.* In a known case of gonorrhea, a smear which shows gram negative extracellular diplococci indicates that further treatment is necessary. In all doubtful cases confirmatory specimens should be forwarded.
3. *No Gram negative diplococci found.* Such a report does not necessarily indicate that gonorrhea is not present. In all cases where the clinical symptoms warrant it, additional specimens should be submitted.

It will be seen from the above that the Laboratories are reporting their findings; i. e., the presence or absence of *intra-* or *extracellular* diplococci, morphologically resembling the gonococcus, and pus cells. Under "Interpretation of Results", emphasis is placed upon the necessity of correlating the clinical findings with the laboratory results.

BUREAU OF PREVENTABLE DISEASES

D. G. Gill, M. D., Director

AN ECTO-PARASITE SURVEY CONDUCTED UNDER THE C. W. A.

During the period from December 28, 1933 to March 29, 1934, there was carried on in the State, in connection with the broad program of rat eradication, a particular study as to rat parasites. This project, under the C. W. A., was conducted in Dothan, Mobile, and Montgomery, and had as its objectives, (1) the destruction of rodents; (2) the collection and identification of various parasites from these rodents.

In these three cities no poisoning campaign was inaugurated, but reliance was placed entirely on traps. Wood and steel traps were used—the steel ones catching many of the rats alive. Each rat as caught was transferred to a cloth bag and brought into a central laboratory, where the bags were placed in a chloroform jar. In this way all the rats and parasites were killed so as to minimize the danger to the workers. The dead rats caught were merely identified as to species, sex, etc., and were then destroyed. The rats caught alive were

similarly identified and were then combed to remove all the parasites present. These parasites were collected in small vials, preserved in alcohol, and labelled as to what species of rat harbored them and where that rat was caught. Identification of these parasites is being made by the U. S. Public Health Service, but of necessity will require considerable time.

During the time this project was in operation a total of 32,790 rodents were trapped of which approximately 7,000 were combed. From this number of rats, 44,565 fleas, 22,138 mites and 23,401 lice were collected for future identification. Certain rat fleas have been largely blamed for the transmission of typhus fever, but it may be that some of the other varieties found may also be incriminated. Experiments along this line are being conducted at present by the Public Health Service.

The personnel employed on this project at one time reached three hundred, gradually diminishing with restriction in C. W. A. quotas. The importance of rat control was emphasized as never before, both as a health problem and as an economic problem, and undoubtedly further campaigns will be conducted.

BUREAU OF VITAL STATISTICS

W. T. Fales, D. Sc., Director

PROVISIONAL MORTALITY BY CAUSE ALABAMA, 1933

As one might expect, with the extremely favorable mortality in Alabama during 1933, there were some notable reductions in the death rates from certain causes. Typhoid fever, diphtheria and tuberculosis showed notable declines for 1933.

The typhoid death rate was the lowest in the history of the State, being 4.3 per 100,000 population, against 5.0 for the previous year. There were 63 deaths of white persons with a death rate of 3.6 and 56 negro deaths, or a rate of 5.7.

Diphtheria likewise showed a decline, with the lowest rate ever recorded, being 5.7 against 7.5 for 1932. During last year new efforts were made to secure immunization of young children. Since the development of the alum-precipitated toxoid for

immunization against diphtheria, which requires but one dose, health officers and the general practitioners of Alabama have had in their hands an easier means for immunizing the child population. It is believed that the death rate from diphtheria last year reflects increased immunization and that if we continue to immunize the child population of Alabama each year that diphtheria will fast become a vanishing disease.

For the second year in succession, the deaths from tuberculosis showed a decrease, with a death rate of 70.1 from tuberculosis, all forms against 72.4 for 1932. The white death rate from this cause was 41.3 and the negro rate 121.9. The intimate association between the white and colored races in the South, particularly in the case of domestic servants, makes the control of tuberculosis among the colored population as important as that for the white population. During the next few years Alabama must extend its attack on this disease which ranks third as a cause of death in Alabama, compared with a rank of seven for the country as a whole.

A very large part of the favorable mortality during 1933 was due to the low death rate from influenza and pneumonia. The death rate from influenza was 34.1, while that from pneumonia was 59.0, an extremely low rate.

Other important causes in which there were decreases were diabetes, declining from 10.5 per 100,000 in 1932 to 9.8, and suicide, declining from 8.2 to 6.8. Deaths connected with childbirth showed a decline in number, but this apparently was associated largely with the decrease in the number of births during the year.

On the other side of the ledger there were increases. Outstanding among these was the increase from eleven to thirty-five deaths from Brill's disease or mild typhus fever. Much publicity has been given already to the increase of this disease in the southeastern counties of Alabama. One of the outstanding projects under the C. W. A. program was an extensive rat eradication program to control this disease. It is too early to know how effective this line of attack was in bringing the disease under control.

Measles was epidemic to a slight extent in the spring of 1933 and the mortality

from this cause increased from 0.2 to 1.1. This disease fluctuates from year to year, the mortality showing a peak every three or four years. Nineteen thirty-two was an extremely low year and the indications are that 1934 will be a high year.

Deaths from malaria showed an increase from 182 to 276. During the latter months of the year, with the assistance of the C. W. A., the Bureau of Sanitation of the State Department of Health was able to carry out many drainage projects which should result in a permanent control of this disease in many counties of the State.

Deaths from cancer continued to show a slight increase, from 55.5 to 57.2. At the present time the function of a health department against the ravages of this disease is to assist the medical profession in educating the public to the need of a periodic health examination to detect the disease in its early stages. The State Medical Association has a committee on the prevention of cancer which is active in this respect.

Turning to the deaths from external causes and violence, a decrease in the death rate from suicide in 1933 has already been noted. The death rate from homicide increased from 21.9, in 1932, to 24.4, in 1933. While the high homicide rate for the colored population of 48.2 is largely responsible for the high death rate from homicide in Alabama, the death rate for the white population of 11.1 is higher than the combined homicide rate of 10.7 for 180 American cities, recently reported by Dr. Frederick L. Hoffman, in the *Spectator*, for April 12, 1934. There were three legal executions in 1933.

The deaths from all accidental causes was 55.8, against 64.0 for 1932. The death rate from accidents for 1932 was unusually high, due to the disastrous tornado of that year. Deaths from automobile accidents showed an increase of 14.7 per cent. The death rate from this cause for 1933 was 17.9, and reflects the increased use of automobiles during the past year. A slight increase was shown in mine accidents, the death rate being 1.2 against 1.0 for the previous year. Accidental deaths from other causes showed a decrease.

Appended is a table setting forth the provisional statistics for 1933.

Provisional Mortality by Cause
Alabama, 1933

CAUSES	Number of Deaths Registered Alabama 1933			Annual Rate Per 100,000 Population		
	White	Colored	Total	White	Colored	Total
ALL CAUSES	14565	12352	26917	826.8	1261.4	982.1
Typhoid fever	63	56	119	3.6	5.7	4.3
Typhus fever	26	9	35	1.5	0.9	1.3
Smallpox						
Measles	25	5	30	1.4	0.5	1.1
Scarlet fever	19		19	1.1		0.7
Whooping cough	99	85	184	5.6	8.7	6.7
Diphtheria	128	29	157	7.3	3.0	5.7
Influenza	551	385	936	31.3	39.3	34.1
Pneumonia, all forms	908	709	1617	51.5	72.4	59.0
Poliomyelitis	8	2	10	0.4	0.2	0.4
Tetanus	20	27	47	1.1	2.7	1.7
Tuberculosis, all forms	727	1194	1921	41.3	121.9	70.1
Tuberculosis, pulmonary	670	1086	1756	38.0	110.9	64.1
Malaria	147	129	276	8.3	13.2	10.1
Cancer, all forms	1125	442	1567	63.9	45.1	57.2
Diabetes mellitus	196	74	270	11.1	7.5	9.8
Pellagra	159	206	365	9.0	21.0	13.3
Cerebral hemorrhage, apoplexy	906	697	1603	51.4	71.2	58.5
Diseases of heart	2045	1374	3419	116.1	140.3	124.7
Diarrhea and enteritis						
Under 2 years	354	178	532	20.1	18.2	19.4
2 years and over	144	61	205	8.2	6.2	7.5
Nephritis	1199	961	2160	68.1	98.1	78.8
Puerperal state, total	206	209	415	11.7	21.3	15.1
Puerperal septicemia	75	64	139	4.3	6.5	5.1
Congenital malformations	156	54	210	8.9	5.5	7.7
Congenital debility and other diseases of early infancy	825	598	1423	46.8	61.1	51.9
Senility	187	268	455	10.6	27.4	16.6
Suicides	173	13	186	9.8	1.3	6.8
Homicides	196	472	668	11.1	48.2	24.4
Accidental burns	67	73	140	3.8	7.5	5.1
Accidental drownings	39	57	96	2.2	5.8	3.5
Accidental traumatism						
by firearms	44	36	80	2.5	3.7	2.9
Mine accidents	15	17	32	0.9	1.7	1.2
Railroad accidents	60	56	116	3.4	5.7	4.2
Automobile accidents	348	142	490	19.7	14.5	17.9
Other external causes	385	201	586	21.9	20.5	21.4
Other specified causes	2211	1693	3904	125.5	172.9	142.4
Ill-defined and unknown causes	804	1840	2644	45.6	187.9	96.5

BUREAU OF SANITATION

G. H. Hazlehurst, Director

SOME LESSONS LEARNED FROM THE AMEBIASIS OUTBREAK IN CHICAGO

There appeared in the February 3rd issue of the Journal of the American Medical Association two documents relative to the outbreak of amebiasis in Chicago. The first of these reports provides a chronology of the incidents associated with the recognition of the nature of the outbreak and the measures employed in attempting to bring it under control. The second report is that of a committee assembled to study the source of the outbreak and to drawing up recommendations for the prevention of similar catastrophes in the future. (Both of the reports were assembled for publication by Doctor Herman N. Bundesen, President of the Board of Health of Chicago.)

From the first of the documents the following is abstracted:

After conducting a close control over food served in one of the hotels by those in charge of the investigation, a second examination of the employees was made about the middle of November. It revealed that there were carriers in the hotel who had not been infected on the first examination. It began to become apparent that control over food was not checking the infection. At the same time the return of questionnaires sent to previous guests of the hotel were indicating the true size of the outbreak. It was therefore decided that although water had not been commonly implicated in epidemics of amebiasis the possibility of water contamination should be investigated.

The results of the sanitary engineering survey as given in the second report are quoted in part:

"In undertaking an investigation of the water supplies related to the outbreak of amebic dysentery the physical or structural factors of the sanitary equipment of the two hotels chiefly concerned were surveyed. An initial inspection made on November 22nd, 1933 disclosed sufficient causes for further detailed review, and such examination has been carried on.

"Both hotels have their source of water supply from the public water mains of the City of Chicago. Owing to the height of the buildings, however, supplementary pumpage is necessary.

"Investigations made so far revealed three important groups of structural sanitary hazards present in both hotels. In order of increasing importance, they are tentatively listed as:

"1. Old and generally defective water and sewerage piping layouts, potentially at least, permitting back siphonage of a number of fixtures into water lines.

"The water and sewer system in both hotels are typical of layouts in older buildings in Chicago and other American cities. They are a potential source of danger but do not, except under special circumstances, such as continuous overloading, produce extensive pollution.

"2. Chance breaks in sanitary sewers or heavy overflow of mixed sanitary sew-

age and storm drainage in and outside of the basements.

"Several events occurred during 1933 which may have some significance in determining the cause of the epidemic. On June 29th, 1933 an unusually heavy rainfall occurred in the City of Chicago. It flooded the combined sanitary and storm water sewers of the city, including those in the vicinity of these hotels. The storm of June 29th was followed by a second heavy rainfall on July 2nd, 1933. On this occasion, according to reliable statements, two sewers from one of the hotels, discharging into the public sewer, broke. Sewage flowed back into the basement of the hotel into the ice storage house until the pressure forced one of the closed doors open, thereby permitting the sewage to cover the floor of the entire food handling establishment of the hotel to a depth of three to six inches.

"3. Cross-sections of serious character between water and sewer lines or between water lines carrying portable water and water potentially subject to contamination.

"A number of cross-sections were found and these have since been eliminated. Such cross-connections between sewers and water lines are significant as a public health hazard, since they may permit sewage to flow into water lines".

In the opinion of the Editor of the Journal of the American Medical Association amebiasis has been a rare diagnosis in most northern communities, so rare indeed that suspicion is now aroused as to the frequency with which it may have been overlooked. Now comes evidence that from three to five per cent of our entire population is infected. This evidence, with the fact that chlorination does not seem to control or destroy *E. histolytica*, the cause of amebiasis, justifies strong emphasis on the subject.

This outbreak of amebiasis has centered interest on the necessity of eliminating cross-connections of all types between safe and unsafe water systems. It has forcibly brought to mind the danger of defective or antiquated plumbing. The State Department of Public Health has constantly worked, with some measure of success, to eliminate cross-connections of a major type.

Appreciating the importance of this matter, this Department desires to call it to the attention of those officials who are the responsible ones in municipalities. The agencies interested are: County Health Units, Waterworks Departments, and Plumbing Inspection Departments. It would be well that these agencies, after joint conference, plan and take action as may seem desirable. Naturally the most important places would be those catering to and serving the public, and industrial establishments.

CURRENT STATISTICS

*PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA

	Estimated Expectancy	
	February	March
Typhoid	11	8
Typhus	30	19
Malaria	55	61
Smallpox	2	5
Measles	1903	3867
Scarlet fever	96	47
Whooping cough	481	339
Diphtheria	105	104
Influenza	856	596
Mumps	56	199
Poliomyelitis	1	2
Encephalitis	5	4
Chickenpox	223	274
Tetanus	4	5
Tuberculosis	328	248
Pellagra	11	31
Meningitis	4	4
Pneumonia	547	685
Syphilis (private cases)	219	315
Chancroid (private cases)	7	7
Gonorrhea (private cases)	197	249
Ophthalmia neonatorum	0	2
Trachoma	0	6
Tularemia	3	4
Undulant fever	2	2
Dengue	0	0
Amebic dysentery	4	2
Rabies—human cases	0	0
Positive animal heads	72	107

*As reported by physicians and including deaths not reported as cases.

The Estimated Expectancy represents the median incidence of the past nine years.

PROVISIONAL MORTALITY STATISTICS

Alabama, February 1934

CAUSES	Number of Deaths Registered February 1934			Annual Rate per 100,000 Population		
	White	Colored	Total	Feb. 1934	Feb. 1933	Feb. 1932
ALL CAUSES	1375	1053	2428	1142.7	989.8	918.8
Typhoid fever	2	1	3	1.4	0.9	6.0
Typhus					1.4	
Smallpox						1.9
Measles	19	3	22	10.3		1.4
Scarlet fever	2		2	0.9		1.4
Whooping cough	10	13	23	10.8	4.3	6.5
Diphtheria	6	3	9	4.2	5.2	5.6
Influenza	110	50	160	75.3	67.5	41.4
Pneumonia, all forms	185	128	313	147.3	76.1	94.9
Poliomyelitis						
Tetanus	2	1	3	1.4	1.4	2.8
Tuberculosis, all forms	68	95	163	76.7	76.1	79.1
Tuberculosis, pulmonary	64	84	148	69.6	69.9	73.5
Malaria	1		1	0.5		2.3
Cancer, all forms	75	29	104	48.9	48.0	48.4
Diabetes mellitus	20	9	29	13.6	12.4	6.0
Pellagra	8	9	17	8.0	11.4	12.1

PROVISIONAL MORTALITY STATISTICS
Alabama, February 1934—Continued

CAUSES	Number of Deaths Registered February 1934			Annual Rate per 100,000 Population		
	White	Colored	Total	Feb. 1934	Feb. 1933	Feb. 1932
Cerebral hemorrhage, apoplexy	94	58	152	71.5	55.6	59.6
Diseases of heart	182	116	290	136.5	131.7	108.0
Diarrhea and enteritis						
Under 2 years	11	6	17	8.0	5.2	3.7
2 years and over	5		5	2.3	1.9	4.6
Nephritis	100	72	172	80.9	86.6	77.7
Puerperal state, total	15	12	27	12.7	16.2	17.2
Puerperal septicemia	5	6	11	5.2	4.3	5.1
Congenital malformations	10	1	11	5.2	7.1	3.2
Congenital debility and other diseases of early infancy	70	38	118	55.5	42.3	39.1
Senility	17	27	44	20.7	18.1	9.8
Suicides	13		13	6.1	7.6	8.8
Homicides	14	29	43	20.2	22.8	16.3
Accidental burns	12	21	33	15.5	10.9	8.4
Accidental drownings	2	2	4	1.9	1.9	2.8
Accidental traumatism by firearms	3	6	9	4.2	2.4	2.8
Mine accidents	3		3	1.4		1.4
Railroad accidents	4	1	5	2.3	2.8	0.9
Automobile accidents	25	9	34	16.0	10.9	17.7
Other external causes	28	29	57	26.8	18.1	17.7
Other specified causes	175	131	306	144.0	124.6	125.7
Ill-defined and unknown causes	84	154	238	112.0	111.8	85.2

Medical News

(Secretaries of county medical societies and other physicians will confer a favor by sending for this section of the Journal items of news relating to society activities.)

Record is made of the death on April 22 of Dr. Francis Marion Thigpen from influenza with cardiorenal complications. Dr. Thigpen, a graduate of Tulane University 1891, was a prominent Southern oto-laryngologist, a member of the Montgomery County Medical Society, the American Medical Association and a fellow of the American Laryngological, Rhinological and Otolological Society, of which he was a founder member.

OFFICIAL CALL

To the Officers, Fellows and Members of the American Medical Association Eighty-Fifth Annual Session Cleveland, June 11-15.

The eighty-fifth annual session of the American Medical Association will be held in Cleveland, Ohio, from Monday, June the eleventh, to Friday, June the fifteenth, Nineteen hundred and thirty-four.

The House of Delegates will convene on Monday, June the eleventh.

The Scientific Assembly of the Association will open with the General Meeting held on Tuesday, June the twelfth, at 8:30 P. M.

The various sections of the Scientific Assembly will meet Wednesday, June the thirteenth, at 9 A. M. and at 2 P. M. and subsequently according to their respective programs.

GOLF IN CLEVELAND

The American Medical Golfing Association will hold its twentieth annual tournament at the Mayfield Country Club in Cleveland on Monday, June 11, 1934.

Thirty-six holes of golf will be played in competition for the fifty trophies and prizes in the eight events. The trophies include the Association Championship for thirty-six holes gross, the Association Handicap Championship for thirty-six holes net, the Choice Score Handicap Championship for thirty-six holes gross, the low gross Eighteen Hole Championship, the low net Eighteen Hole Handicap Championship, the Maturity Event limited to Fellows over 60 years of age, the Oldguard Championship limited to competition of past presidents, and the Kickers Handicap. Other events and prizes will be announced at the first tee.

Dr. Homer K. Nicoll of Chicago is president and Dr. Charles Lukens of Toledo and Dr. John W. Powers of Milwaukee are vice-presidents of the American Medical Golfing Association, which was organized in 1915 by Dr. Will Walter, Dr. Wendell Phillips and Dr. Gene Lewis, and now totals 1,100 members representing every state in the union. The living past presidents include Dr. Wendell Phillips of New York, Dr. Thomas Hubbard of Toledo, Dr. Fred Bailey of St. Louis, Dr. Edward Martin of Philadelphia, Dr. Robert Moss of San Antonio, Dr. Charlton Wallace of New York, Dr. Will Walter of Chicago and Charlottesville, Va., Dr. James Eaves of San Francisco, Dr. Chester Brown of Danbury, Conn., Dr. Samuel Childs of Denver, Dr. W. D. Shelden of Rochester, Minn., Dr. Walter Schaller of San Francisco, Dr. Edwin Zabriskie of New York, Dr. Frank Kelly of Detroit and Dr. John Welsh Croskey, Philadelphia.

The Cleveland Committee is under the chairmanship of Dr. John B. Morgan, 1301 Medical Arts Building, Cleveland, Ohio. He will be assisted by Drs. R. H. Bridge, A. V. Boysen, E. F. Freedman, F. T. Gallagher, Secord Large, E. P. McNamee, J. J. Marek,

Theodore Miller, U. V. Portman and M. A. Thomas.

The Mayfield Country Club of Cleveland is described by Chairman Morgan as "probably the finest course in the district, and certainly one of the most interesting. Many championships have been held on this course, and I am sure the visiting doctors will be delighted with it in every sense of the word. It has a most beautiful club house, and we can promise a merry nineteenth hole and a dinner fit for a champion."

All male Fellows of the American Medical Association are eligible and cordially invited to become members of the A. M. G. A. Write the Executive Secretary, Bill Burns, 4421 Woodward Avenue, Detroit, for an application blank. Participants in the A. M. G. A. tournament are required to furnish their home club handicap, signed by the secretary. No handicap over 25 is allowed, except in the Kickers'. No trophy is awarded a Fellow who is absent from the annual dinner.

The twentieth tournament of the American Medical Golfing Association promises to be a happy affair, attended by some two hundred medical golfers from all parts of the United States.

POSTGRADUATE COURSE IN PUBLIC HEALTH

Vanderbilt University will give its postgraduate course in public health during the coming summer. The course will cover a period of twelve weeks from Monday, June 18, to Saturday, September 8. It is open to qualified physicians who expect to enter public health work as well as to health officers who desire to review the latest developments in public health practice. It is given with the cooperation of the Tennessee State Department of Public Health.

The course is divided into two parts of six weeks each. The first part consists of lectures, laboratory demonstrations, work in out-patient departments which deal with conditions of public health importance, conferences on the administration of county health organizations and their relation to other health agencies, demonstrations of water and milk control and sewage disposal, exercises in epidemiology, vital statistics, graphic methods, and so forth. This part of the course is given in the Medical School of

Vanderbilt University with demonstrations in other parts of the city. The second part of the course consists of practical field work under a trained health officer in a county having a full-time health organization, with conferences to discuss the progress of the work. An examination is given at the conclusion of the course as an aid in determining the scholastic standing of those registered. The registration fee for this session of the course will be \$10.00. The class will be limited to ten.

The plan and objectives of the course are outlined in more detail in an article entitled, "The Training of Health Personnel" by W. S. Leathers and A. E. Keller, in the American Journal of Public Health, August 1933, pages 816-823. The only change in the course as there outlined is that the sanitary survey of a town is omitted at the present time.

The Journal has been asked to call this opportunity to the attention of any health officers or prospective health officers in Alabama who may wish to take advantage of it. Any persons who wish to take the course should communicate as soon as possible with Doctor Henry E. Meleney, Department of Preventive Medicine and Public Health, Vanderbilt University School of Medicine, Nashville, Tennessee.

TECHNICAL EXHIBITS OF RECENT ANNUAL SESSION

The technical exhibits displayed at the annual sessions of the State Association are always a feature of the meeting. At the recent meeting in Birmingham the layout was attractive, acceptable and educational. A large majority of the members spent much time with these exhibits and expressed the value derived from them. The exhibitors were most courteous and anxious to answer any questions or explain in detail the usage of the articles exhibited.

The Medical Association appreciates their patronage and courtesy and suggests that its members support these firms whenever possible:

McKesson-Doster-Northington, Birmingham.
Birmingham Apothecary, Birmingham.
Sharp and Smith Co., Chicago, Ill.
C. B. Fleet and Co., Lynchburg, Va.
Gerber Products, Freemont, Michigan.
McKesson Appliance Co., Toledo, Ohio.
Surgical Selling Co., Atlanta, Ga.
Birmingham Electric Co., Birmingham.
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The Heiabrink Co., Minneapolis, Minn.
General Electric X-ray Corp., Atlanta, Ga.
Stokley Products Co., Indianapolis, Ind.
Buffalo Rock Co., Birmingham.
Bilhuber-Knoll Co., Jersey City, N. J.
W. F. Prior and Co., Hagerstown, Md.
Physicians Expansion Bureau, Washington, D. C.
Mutual Insurance Agency, Malpractice Insurance, Birmingham.

Book Abstracts and Reviews

The Practical Medicine Series of Year Books: General Medicine. Infectious Diseases, edited by George F. Dick, M. D., Professor of Medicine, University of Chicago; Attending Physician, Billings Hospital. Diseases of the Chest, except Heart, edited by Lawrason Brown, M. D., Trudeau Sanatorium, Saranac Lake, N. Y. Diseases of the Blood and Blood-making Organs and of the Kidney, edited by George R. Minot, M. D., Professor of Medicine, Harvard, and W. B. Castle, M. D., Associate Professor. Diseases of the Heart and Blood Vessels, edited by W. S. Stroud, M. D., Professor of Cardiology, Graduate School of Medicine, University of Pennsylvania. Diseases of the Digestive System and Metabolism, edited by George B. Eusterman, M. D., Chief of Section in Medicine, Mayo Clinic. The Year Book Publishers, Inc., Chicago, Ill. 825 pages. Price \$3.00.

The value of any collection of abstracted articles such as those contained in The Practical Year Book Series depends entirely upon the wisdom with which the articles are selected and the care with which they are abstracted. In the volume on medicine, a large number of the articles have been gathered together but only the brief editorial notes aid the reader in selecting those articles which are most valuable.

During the past year the virus of cowpox was apparently successfully grown in the test tube. The future possibilities of this discovery are obvious. In the treatment of mumps, it appears that metallic lead applied to the tongue is of definite therapeutic value. Another article intimates that neosalvarsan may be of value in the treatment of tularemia and that the arsenicals may be of value in the treatment of undulant fever. Only further study will be necessary to prove whether these three diseases will yield to therapeutic measures.

If any one presumes that the fight against tuberculosis is almost won, he needs only to read the article by Kendall Emerson to learn the correct status of this fight.

The entire section on diseases of the blood is particularly well handled, especially the articles dealing with the intrinsic and extrinsic factors in the treatment of pernicious anemia, the use of iron salts in the treatment of anemias, osteosclerosis, aplastic anemia and purpura hemorrhagica. The many conflicting articles on agranulocytosis indicate how unsettled is our conception of the value of various new therapeutic procedures.

As one reads conflicting reports from different authors, one cannot fail to appreciate the necessity of conservatism in taking up new and unproved methods of treatment. On the other hand when one reads some of the very convincing scientific studies included in the articles in this volume, one cannot fail to appreciate the value of keeping up with the most recent advances in medical science. The Year Book Series is of great value to those whose time precludes more extensive study.

C. K. W.

The Practical Medicine Series of Year Books: Urology. Edited by John H. Cunningham, M. D., Associate in Genito-Urinary Surgery, Harvard University Post-Graduate School of Medicine. 450 pages. The Year Book Publishers, Incorporated, Chicago, Ill. Price \$2.25.

In the evolution of urology as a distinct science, its adherents have not forgotten how closely it is linked to the fields of general medicine and surgery. A knowledge of the physiology of the body as a whole made possible the discovery of the value of the ketogenic diet in the cure of urinary infections. Other recent contributions dealing with the newer urinary antiseptics, intravenous urography, pyeloplasty and transurethral prostatic resection are included. A large group of articles on gonorrhea indicates that this frequently encountered and well known disease is still in need of more scientific investigation.

J. H. B.

Truth About Medicines

Diphtheria Toxoid

The Squibb Laboratories announce the availability of Refined Diphtheria Toxoid Alum Precipitated with the featured advantage that one injection is sufficient for the immunization of the majority of children against diphtheria. The efficacy of the preparation in immunizing against diphtheria is believed to be due to the fact that the alum precipitated toxin, since it is relatively insoluble, is more slowly absorbed and remains in the body sufficiently long to produce adequately protective amounts of antitoxin.

One injection of Alum Precipitated Toxoid is reported to be as effective as two or three injections of ordinary unprecipitated toxoid, and is also said to produce a greater number of negative Schick Tests, that is, a higher percentage of immune individuals. These features make Alum Precipitated Toxoid of particular value in public health work, for two or three times as many persons may be immunized with no more effort nor time on the part of the public health worker. It also makes it easier for the family physician to follow the advocated procedure of immunizing every infant, at whose birth he has officiated at 6 months of age.

Squibb Refined Diphtheria Toxoid Alum Precipitated is prepared according to the method reported by the Alabama Board of Health for a single-dose treatment. It is marketed in 0.5 cc. vials for immunization of one person, and in 5 cc. vials containing sufficient material for the immunization of ten individuals.

Miscellany

PHYSICIANS EXPANSION BUREAU

Attention is directed to advertisement of the Physicians Expansion Bureau appearing for the first time in the Journal on page 3 of the front advertising form. Other insertions will appear monthly. The advertisement constitutes a part of an educational campaign designed to promote a closer relationship between members of the profession and the public. If such educational campaign can counteract, even in part, advertisements of nostrums, it will have served a most beneficent purpose.

Representatives of the Bureau in visiting cities of the State will call on leading druggists and as many physicians as possible to outline the plan and procure suggestions. The cooperation of physicians with druggists will be appreciated by the Bureau.

VENEREAL DISEASE INFORMATION

For a number of years the U. S. Public Health Service has been publishing, for the information of physicians, health officers, and others, a monthly abstract journal known as "Venereal Disease Information." This publication contains usually one original article on a subject of general interest in connection with the venereal diseases and numerous abstracts from the current literature pertaining to these diseases. In the preparation of this abstract journal more than 350 of the leading medical journals of the world are reviewed and abstracts made of the articles on this subject.

The cost of "Venereal Disease Information" is only fifty cents per annum, payable in advance to the Superintendent of Documents, Government Printing Office, Washington, D. C. It is desired to remind the reader that this nominal charge represents only a very small portion of the total expense of preparation, the journal being a contribution of the Public Health Service in its program with State and local health departments directed against the venereal diseases.

ADVERTISERS' NOTES

Specialists in the study of child nutrition have been quick to recognize the value of milk as the mainstay of the child's diet.

"But what," asks the frantic mother of a youngster who dislikes milk, "can I do to

make my child eagerly want that which he now rebels against?"

Today the doctor who is confronted with this query can solve this age-old problem by the helpful advice to mix Cocomalt with the milk. For by the simple addition of Cocomalt, milk not only becomes a delicious chocolate flavor drink—but its food-energy value is practically doubled. Cocomalt in milk provides extra proteins, carbohydrates and minerals (food-calcium and food phosphorus). It is also a rich source of Vitamin D.

Thus Cocomalt not only induces youngsters to drink all the milk they require—it provides extra food-energy value as well and a rich supply of Vitamin D. Cocomalt is accepted by the Committee on Foods of the American Medical Association.

BORDEN'S EVAPORATED MILK

"Extensive work done on the food value and digestibility of milk has shown that pasteurized milk, unsweetened evaporated milk, and dried whole milk may be used one for the other."

This interesting and significant quotation is taken from an article entitled "The Doctor and the Family Budget" by Anderson and Gillett in the Medical and Professional Woman's Journal for March, 1934 (page 78). The authors point out that standard evaporated milk can be obtained at low cost, the savings on this high quality product often being the means of supplying the family with other necessary protective foods.

"Many mothers," they continue, "will not believe that unsweetened evaporated milk is beneficial for their children until the physician recommends it."

Physicians know that the advantages of evaporated milk have been amply demonstrated by clinical research and experience. In recommending an evaporated milk, however, it is desirable to specify an outstanding brand, such as Borden's, in order that patients will be assured of the product that will give the utmost satisfaction to them as well as to the physician.

Borden's was the first evaporated milk to be submitted to the Committee on Foods of the American Medical Association and the first to receive its seal of acceptance. Since 1930 Borden's has enjoyed the well-merited privilege of displaying this important seal.

PREVENT TABES ★ PARESIS

BY EARLY DIAGNOSIS OF NEUROSYPHILIS AND
TREATMENT WITH

TRYPARSAMIDE MERCK

Sodium Salt of N-phenylglycineamide-p-arsonic acid.



A blood Wassermann test, whether the reaction be negative or positive, is of limited value for determining syphilitic involvement of the central nervous system. Every patient with syphilis is a potential neurosyphilitic. To save such patients from the unfortunate later stages of the disease, such as tabes or paresis, it is essential that neurosyphilis be discovered in its early stages.

The absence of clinical symptoms in most cases, leaves a spinal fluid examination as the best available method of diagnosis. Fortunately, this method is dependable and gives essential information for a correct diagnosis.

Every patient with syphilis should have a spinal fluid examination. In the case of primary syphilis the spinal puncture should not

be made until after a few months of treatment has been given.

Cases of neurosyphilis diagnosed during the incipient stages may be brought under control by the use of Tryparsamide. With the use of Tryparsamide in the early, or meningeal type of case, clinical improvement is prompt in the majority of instances, and serological improvement usually occurs within the first year.

Tryparsamide is administered intravenously. Its use is an office procedure, does not disrupt the patient's daily

routine of life, and is inexpensive. The dosage and method of treatment to be adopted with Tryparsamide depend upon the patient's age, physical condition and other factors. Complete information on the subject will be mailed upon request.

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RAHWAY, N. J.

THE JOURNAL

OF

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THE EARLY DIAGNOSIS OF BRAIN TUMORS*

By

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Vanderbilt University Hospital
Nashville, Tennessee

Following the first successful removal of a brain tumor in 1888 by Keen¹, renewed interest in the subject and the brilliant technical methods devised by Cushing² and others gradually led to the knowledge that many of these lesions, hitherto considered hopeless, could be successfully dealt with surgically. Attention then naturally turned toward making the diagnosis sufficiently early to make surgical measures possible. But knowledge of cerebral physiology was meager and cerebral localization was crude, so that the diagnosis was rarely made until the growth had become sufficiently large to cause a general increase in intracranial pressure. The great triad of symptoms caused by this increased pressure are headache, vomiting and failing vision due to choked discs. These symptoms came to be thought of as constituting the typical clinical picture of brain tumor and rash was he who dared to make the diagnosis in their absence.

Thus the neuro-surgeon found it impossible to attack these always formidable lesions until they had become large enough to cause the symptoms of general pressure. Small wonder that he too often found the tumor too large for removal and his mortality rate distressingly high.

*Read before the Madison County Medical Society, Huntsville, March 13, 1934.

1. Keen, W. W.: Am. Jour. Med. Sc., 96, 329, 1888.

2. The progress in this field up to 1925 was admirably reviewed by Dr. Cushing in the third of his Cameron Prize Lectures, Oxford Univ. Press, 1926.

Fortunately, however, with the passage of time and the steady increase and correlation of our knowledge of the physiology, pathology and clinical manifestations of brain tumors, we have come to be less and less dependent on the *general pressure* signs and to recognize with increasing frequency the earlier *localizing* signs. These localizing signs are due to disturbance of the function of the parts of the brain actually injured by the tumor and are the true signs of the tumor itself. Bailey has recently gone so far as to write, "There is only one cardinal symptom of tumor of the nervous system—a non-febrile, steadily increasing alteration in nervous function³". The early diagnosis of brain tumors depends upon our recognition of these disturbances of function and their significance. I wish to discuss some of the more common of them in this paper.

Progressive lesions in any part of the brain may give rise to two types of symptoms, the irritative and the destructive. Irritative symptoms appear early and are more pronounced if the lesion is on or near the cortical surface of the brain. Ultimately, the symptoms of destruction inevitably supervene, and the irritative phenomena diminish.

In the *motor area* (Fig. 1), irritation causes focal or Jacksonian convulsions. Such attacks are easily differentiated from those of idiopathic epilepsy by the fact that they always begin in one extremity or one-half of the body or face. They may or may not spread to the opposite half of the body and be accompanied by loss of consciousness. Such focal convulsions can result only from irritation of the motor cortex and this irritation is most frequently due to the presence of a tumor. Idiopathic epilepsy rarely begins after adult life is reached, so

3. Bailey, P.: Intracranial Tumors. Thomas, Springfield, 1933. Preface, p. xl.

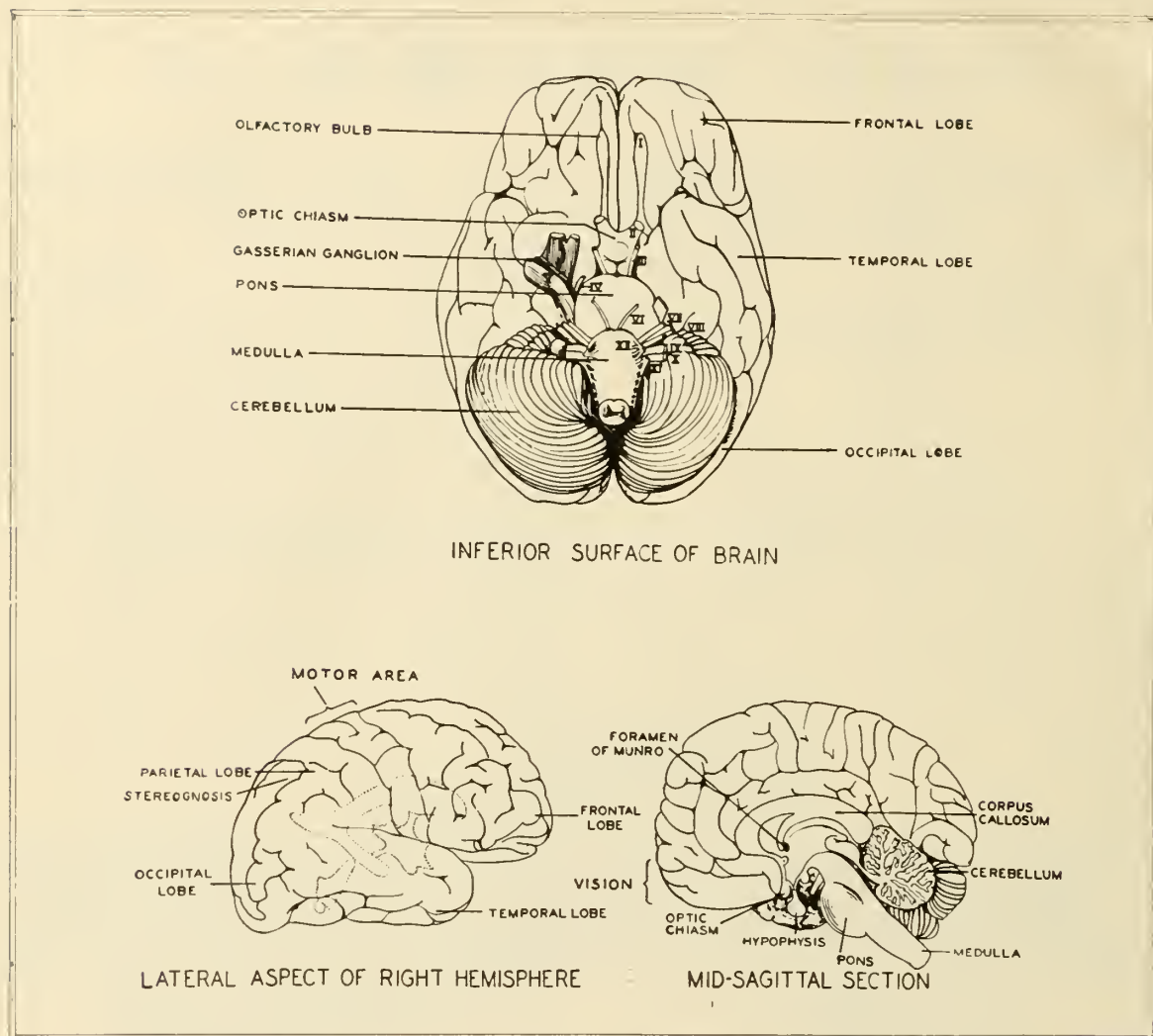


Figure 1

that the onset of convulsions of any kind in an adult should excite the suspicion that one is dealing with a brain tumor.

As the lesion in the motor area progresses to functional destruction, the result is weakness and ultimately paralysis of the opposite half of the body. This is always progressive and in this it differs from the sudden paralysis of cerebral vascular accidents such as hemorrhage or thrombosis. It must not be forgotten, however, that hemorrhage can result from erosion of a blood vessel by a tumor. In such cases, sudden hemiplegia may result and the diagnosis can only be made by careful evaluation of pre-existing symptoms. In tumor cases, even before the actual motor weakness has become demonstrable, one can often find hyperactive tendon reflexes and

the pathological toe reflexes of Babinski and Oppenheim.

Just back of the motor area lies the *area of cortical sensation* and lesions involving this area cause various disturbances of sensation on the opposite side. The most common is hypesthesia, a diminution of the perception of painful and tactile stimuli.

Lesions still farther back in the parietal lobe involve the *stereognostic center* and those patients are unable to detect the size, shape and weight of objects. I have recently operated on a woman with a large tumor in this area whose only well marked localizing symptom was complete astereognosis in the opposite hand.

In the *temporal and temporo-parietal areas* lie the cortical centers for taste, smell

and hearing. Irritation of these areas causes hallucinations of taste and smell (the so-called "uncinate fits") and of hearing, whereas destruction later results in loss of these senses. Irritation of the temporal lobe also sometimes results in "dreamy-state" attacks in which the patient suddenly looks blank for a moment and is afterward able to remember only that he felt himself floating into some indescribable dream. The temporal lobe functions connected with vision and speech I will discuss later.

Lesions in the *frontal lobes*, especially on the right side, may cause no localizing symptoms until late. Sooner or later, however, these individuals exhibit various changes in mental functions, such as personality changes, loss of memory, irritability, facetiousness, and mental retardation.

Cerebellar tumors are much more common in childhood. Irritation of the cerebellum results in the so-called "cerebellar fits", in which there are marked opisthotonus, retraction of the head and rigidity of the extremities in extension. Destruction

of cerebellar function, on the other hand, results in incoordination, ataxia, staggering, dizziness and nystagmus. On account of their position in the posterior fossa, cerebellar tumors usually cause early obstruction of the outflow of cerebrospinal fluid from the ventricles with the resultant internal hydrocephalus and general pressure signs.

Lesions in the *brain-stem* (pons and medulla) almost always cause multiple and usually bilateral cranial nerve palsies with involvement of the pyramidal tracts and weakness of one or both sides of the body.

Another posterior fossa tumor which has a very characteristic order of development of symptoms is the *acoustic fibroblastoma* which arises from the sheath of the eighth nerve as it leaves the brain-stem in the cerebello-pontile angle. The onset of symptoms is usually with ringing in one ear; and always progressive deafness in one ear makes its appearance early. Soon the lesion compresses the adjacent seventh and fifth nerves, causing a facial weakness and loss of facial sensation on the same side. Subsequently, cerebellar and pyramidal

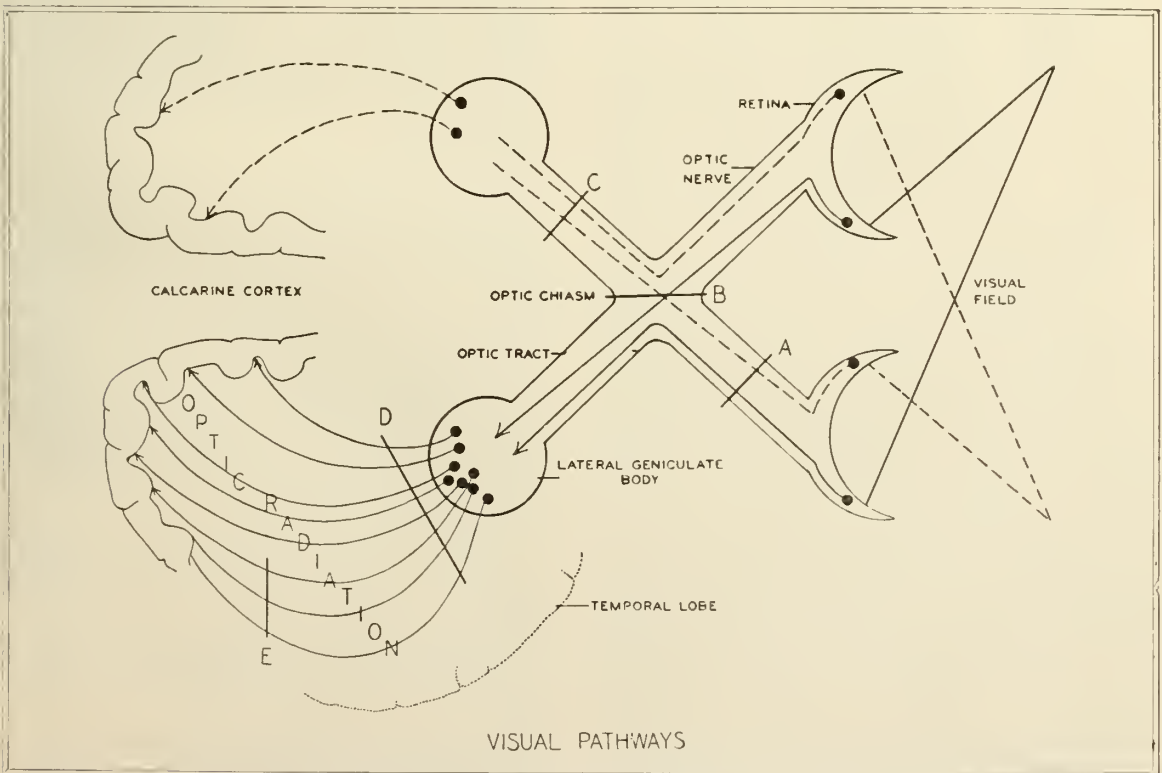


Figure 2

tract symptoms develop and general pressure signs usually occur rather early.

Lesions involving the *visual pathways* (Fig. 2) give rise to characteristic changes in the visual fields. The most common of these are two: first, the bitemporal hemianopsia caused by tumors of the pituitary and its immediate neighborhood. These lesions press first upon the crossed fibers of the optic chiasm, causing blindness in the temporal half of each visual field.

The second visual field defect is the homonymous hemianopsia caused by involvement of the optic tracts in the temporal or occipital lobes. These fibers supply vision to the opposite halves of the visual fields of both eyes. The patient himself often notices that he cannot see to one side, or he may run into objects on the blind side. One patient recently observed that he could not see the right half of newspaper headlines. In the early stages, however, the defect can often be detected only by careful perimetry. At first, too, the patient may have hallucinations of vision which vary from flashes of light or spots before the eyes in temporal lobe lesions to complex formed objects if the lesion be in the occipital lobe.

Defects in the complex *mechanism of speech* are sometimes early and reliable signs of brain tumor. The study of the various phases of this mechanism constitutes one of the most fascinating parts of neurology. In right-handed individuals, the various speech centers lie in the left hemisphere in an area extending from the postero-inferior part of the frontal lobe (Broca's convolution) to the antero-inferior portion of the occipital lobe and involving the upper portion of the adjacent temporal lobe. Tumors in this area may cause defects in any or all of the phases of speech, such as ability to articulate words, to remember words, to write or understand spoken or written words.

In spite of the value of all these localizing neurological signs, there remain some cases in which an exact localization cannot be made from the history and examination alone. It is in these cases that we employ the x-ray as our most useful diagnostic agent. It is used in two ways:

Plain stereoscopic views of the skull often show calcification in the tumor or

changes in the bone overlying the tumor as well as secondary changes resulting from general intracranial pressure. If we are still at a loss, the x-ray is again employed to make ventriculograms following the injection of air into the cerebral ventricles. Most tumors cause some deformity of the ventricular system and this is usually shown in the ventriculograms, though careful and expert interpretation is necessary. Dandy, who introduced the procedure, believes that every space-occupying lesion can be located by means of ventriculography⁴. Wilson and I⁵ have recently studied the ventriculograms in ninety-seven cases of verified tumor. Of these, the location of the lesion was indicated in seventy-nine cases.

Along with the improvement in our diagnostic ability have come equal advances along other lines. An adequate knowledge of neuropathology enables us to predict the likelihood of recurrence of the various tumors, the probable duration of life if a recurrence is expected, and the susceptibility of the different tumors to radiation therapy. Similarly, rapid progress in the highly specialized operative technic (particularly the introduction by Cushing,⁶ of electro-surgical methods) has enabled the neurosurgeon to offer the patient with a brain tumor a lower and lower mortality rate and a greater and greater chance of successful tumor removal.

Narcotic Drug Addiction—It is possible that the abuses of narcotic drugs may be avoided or prevented by giving consideration to the possibility of substituting less dangerous drugs whenever possible. When the use of habit-forming drugs is essential, however, care should be taken not to give larger or more frequent doses than are necessary to achieve the desired end. Patients requiring daily administration of habit-forming drugs should be seen often by the practitioner, and the amount of drugs ordered or supplied should not exceed that required by the patient until seen again.—*Treadway, Texas State J. Med., May 1934.*

4. Dandy, W. E.: *The Brain*. Lewis' Practice of Surgery. Prior, Hagerstown, Md., 1932, vol. 12, p. 89.

5. Pilcher, C. and Wilson, H. M.: *A Study of the Ventriculograms in Ninety-Seven Cases of Verified Intracranial Tumor*. Surg., Gyn. and Obs., in press.

6. Cushing, H.: *Electro-Surgery as an Aid to the Removal of Intracranial Tumors*. Surg., Gyn. and Obs., p. 751, Dec., 1928.

DISEASES OF THE THYROID GLAND WHICH ARE COMMONLY CALLED GOITER*

MYXEDEMA A CASE REPORT

By
E. DICE LINEBERRY, M. D.
Birmingham, Ala.

The average normal adult thyroid gland weighs about 30 gms. It is slightly larger in the female, in whom it becomes enlarged during menstruation, pregnancy, and lactation. When the thyroid gland is sectioned it is of a reddish brown color and is seen to be made up of a number of closed vesicles. Each vesicle is lined with a single layer of cuboidal epithelium, and the lumen is normally filled with colloid material.

In 1914, Kendall separated from the thyroid gland the pure chemical substance, thyroxin, which he demonstrated to possess all the physiologic properties of thyroid secretion. This compound can be crystallized in two forms, one the free base, and the other the salt form. The percentage of iodine in the free base is 65 and in the sulphate crystals 60. Kendall also, from an analysis of the iodine content of the tissues, estimated the normal amount of thyroxin in the adult human, exclusive of that in the thyroid gland, to be 14 mgs. Plummer, by clinical methods, arrived at the same figure.

The average daily exhaustion of thyroxin in the tissues is between 0.5 mgm. and 1.0 mgm. The stimulus for the production of thyroxin appears to be a drop in the amount of active thyroxin in the tissues. Plummer found that the administration of from 0.5 mgm. to 1.0 mgm. of thyroxin intravenously daily to normal individuals did not affect the basal metabolic rate, and concluded that, when thyroxin was administered in sufficient quantities equal to or exceeding the normal requirements of the tissues, the thyroid was put to rest.

The administration of a given amount of thyroxin intravenously produces fairly constant physiologic reactions. Approximately 10 mgms. of thyroxin are contained in 150 grs. of desiccated thyroid. The variable clinical results obtained from the ad-

ministration of desiccated thyroid orally can be explained by a variation in absorption from the gastro-intestinal tract.

As a basis for discussing diseases of the thyroid gland, I would like to use Plummer's classification:

1. Colloid or simple goiter
2. Adenoma without hyperthyroidism
3. Adenoma with hyperthyroidism
4. Exophthalmic goiter
5. Myxedema
6. Cretinism
7. Thyroiditis
8. Malignancy
9. Anomalies

I shall confine my remarks to the first four of these disturbances which are commonly included under the general term goiter, and to the presentation of a case of myxedema.

Colloid goiter occurs principally in the female and is usually first noticed at adolescence and disappears to a large extent before the twenty-fifth year. However, there is a tendency for a thyroid, once overloaded with colloid, to retain more than the normal amount, which renders it easily palpable throughout life. Clinically, the only problem that such a goiter offers is that of differential diagnosis. When it occurs in a highly nervous girl, a diagnosis of exophthalmic goiter is often made. The principal factor in the production of colloid goiter appears to be a deficiency in the amount of iodine available to the thyroid gland for the production of thyroxin. Marine noted a striking relationship between the amount of iodine stored in the thyroid gland and its histologic structure. In thyroids of normal histologic structure there is found about 0.2% iodine. When the iodine content falls below 0.1%, hypertrophic and hyperplastic changes are regularly found. That colloid goiter is produced by an excessive amount of functional stress placed upon the thyroid gland is supported by the facts that such goiters disappear rapidly when thyroxin is administered in sufficient quantities to supply the tissue needs and that they do not usually recur if iodine is administered in small amounts. This stress may arise from a deficiency of iodine in the food supply and, perhaps, by a change in the bacterial flora of the gastro-intestinal tract interfering with the absorption of iodine. The characteristic histologic change

*Read at a meeting of the Jefferson County Medical Society, Birmingham, May 1, 1933.

in colloid goiter is an increase in the amount of intra-acinar colloid with a flattening of the epithelial cells.

The present status of our knowledge of the use of iodine in the prevention of goiter is largely to be credited to the studies of Marine. The development of colloid goiter can, in a large measure, be prevented by the administration of iodine to school children. The suggested dose is 10 mgms. of iodine administered once weekly during the school year. Iodine stearate in the tablet form is usually prescribed. In regions where goiter is endemic, the administration of iodine to pregnant women is advocated for the prevention of colloid goiter in the mother and for the prevention of fetal adenomata and colloid goiter in the offspring. As a rule iodine should not be administered to adults with colloid goiters, as adenomata are frequently concealed in the diffuse colloid enlargement.

The majority of adenomatous goiters have their inception in colloid goiters. The stimulus for the production of both is probably the same; namely, an excess work placed on the thyroid gland due to a deficiency in available iodine for the production of thyroxin. Adenomatous goiter tissue may be considered as a new growth. Some unknown factor brings about the development of new cells and new acini from embryonal rests. This new tissue usually, but not always, becomes encapsulated to form a true tumor, and quite frequently multiple tumors. The individual acini making up such tissue show variable amounts of hypertrophy, hyperplasia, degeneration, and colloid deposit.

Grossly, there is no difference in the appearance of a nonhyperfunctioning adenomatous goiter and a hyperfunctioning adenomatous goiter. Neither is there any histologic difference. Wilson, after a careful microscopic study of 250 goiters of each type, was able to demonstrate a moderate increase of cell hypertrophy, cell hyperplasia, and colloid deposit in the hyperfunctioning ones. Why an adenomatous goiter begins to hyperfunction is not known but once such a goiter begins to hyperfunction, as with island tumors of the tail of the pancreas, they appear to do so without the usual response to the stimulus of supply and demand. The active substance produced by these adenomata is probably not different

in quality from that produced by normal thyroid tissue. This theory is substantiated by the fact that the symptoms of hyperfunctioning adenomatous goiter can be completely reproduced by the continuous administration of an excessive amount of thyroxin. A non-hyperfunctioning adenomatous goiter may readily be stimulated to activity by the administration of iodine. For this reason, the uncontrolled administration of iodinated salt to the entire populace as suggested by Sloan is to be condemned. Whether an adenomatous goiter which has already begun to hyperfunction may be stimulated to do so at an increased rate by the prolonged administration of iodine is an unanswered question. Hyperfunctioning adenomatous goiters are rarely seen in persons younger than thirty-five years of age and usually enlargement of the thyroid gland has been noticed for more than fifteen years before the onset of symptoms.

The stimulus for the production of exophthalmic goiter is even yet more vague than that of colloid and adenomatous goiter. The histologic structure indicates a markedly increased cellular activity. The gland is hyperemic throughout with marked parenchymal cell hypertrophy and hyperplasia and a decreased amount of colloid in the acini. Plummer is of the opinion that in exophthalmic goiter some unknown stimulus, probably acting through the sympathetic nervous system, forces the thyroid to produce thyroxin at so rapid a rate that sufficient iodine is not available for the production of complete thyroxin molecules. An excessive amount of this deficient product produces a similar and yet quite different train of symptoms from those seen in true hyperthyroidism. Plummer is also of the opinion that when iodine is administered in sufficient quantities to meet the requirements of this greatly activated exophthalmic goiter tissue, it is then able to produce an excessive amount of more nearly normal thyroxin instead of an excessive amount of very abnormal thyroxin. Thus is explained the clinical fact that the symptoms of exophthalmic goiter are influenced greatly by iodine medication while those of adenomatous goiter with hyperthyroidism are relatively unaffected. Graham and others, however, do not differentiate between exophthalmic goiter

and adenomatous goiter with hyperthyroidism and believe that we are merely observing different phases of one disease, and that the clinical response to iodine varies with the amount of acinar cell hypertrophy. It is generally accepted that there is an increase in the amount of intra-acinar colloid in exophthalmic goiters after the administration of iodine. Graham, Crile and others are of the opinion that this increased amount of intra-acinar colloid, mechanically produces clinical improvements by compressing the acinar cells and thus reducing their activity.

In thyrotoxicosis there occur functional disturbances in the nervous system, the cardiovascular system, and the gastro-intestinal system with a wide variation in the character and intensity of symptoms and physical signs. I would like to review briefly the more common findings in both exophthalmic goiter and adenomatous goiter with hyperthyroidism. (See table.)

As with any other disease, the management of each case of goiter is a problem unto itself. As I have already stated, colloid goiters usually require no treatment other than prophylaxis.

Adenomatous goiter without hyperthyroidism usually should be left alone until they have attained a size exceeding 3 or 4 cms. in diameter. Adenomata of this size should be removed for two reasons: first, because usually they will continue to grow, and have about a fifty per cent chance of becoming hyperfunctioning, the onset of symptoms of which are so insidious that frequently considerable cardiac damage occurs before a diagnosis is made; and second, because the majority of malignancies of the thyroid gland arise from adenomatous tissue. Unsuspected malignancy is found with sufficient frequency in these tumors to justify using a careful examination and microscopic studies of all adenomata removed.

The treatment for goiter with roentgen ray will not be discussed as subtotal thyroidectomy is now recognized as the only satisfactory method of treatment for adenomatous goiter with hyperthyroidism and exophthalmic goiter.

Patients suffering from adenomatous goiter without hyperthyroidism need no special preoperative preparation; neither do those with mild hyperthyroidism. Un-

fortunately, many of the long standing and severe cases are complicated by cardiac disease with myocardial degeneration and cardiac decompensation. Such cases require the institution of rest and other measures to restore the heart to its maximum functional ability before surgical interference is undertaken. Iodine medication is of no demonstrable value in adenomatous goiter with hyperthyroidism. Digitalis is contraindicated except, perhaps, in a few patients with marked decompensation, and, even then, digitalis should be discontinued for a few days prior to thyroidectomy.

All patients with exophthalmic goiter and those with adenomatous goiter with hyperthyroidism, when exophthalmic goiter cannot be ruled out definitely, should receive iodine for a minimum period of ten days before thyroidectomy is undertaken, and for at least six weeks following thyroidectomy. In mild cases, a preoperative period of complete rest in bed is not required, and the preoperative preparation may be carried out in the home. In severe cases a few weeks of absolute rest are usually necessary. I would like to emphasize the importance of strengthening the patient after the period of rest by permitting him to sit up an increasing length of time each day until he is strong enough to walk about his room before being submitted to any surgical procedure. A simple test of the patient's strength is to request him to step up on a reasonably high chair without the assistance of the arms in raising himself.

Adenomatous goiters seldom if ever recur after removal. About one out of twenty exophthalmic goiters recur, or at least there is a residual thyrotoxicosis after partial thyroidectomy has been performed. The majority of patients with recurring exophthalmic goiter can be maintained in a good state of health by the continuous administration of iodine. However, a small percentage have to submit to a second or third operation.

Plummer has taught us many things about goiter which are at variance with the teachings of others. Since 1911 he has consistently demonstrated that exophthalmic goiter and adenomatous goiter with hyperthyroidism are two separate and distinct disease entities. I, and perhaps most of you, were taught in medical schools that the

	ADENOMATOUS GOITER WITH HYPERTHYROIDISM	EXOPHTHALMIC GOITER
1. Onset	Gradual. Rare before age of 35 years.	Rapid, at any age, but more common between 30 and 40 years of age.
2. Course	Even, usually gradually increasing in severity.	Tendency toward exacerbation, crises, and partial remissions.
3. Nervousness	Usually present.	Often profound.
4. Weight Loss	Usually gradual.	Often rapid.
5. Gastro-Intestinal Symptoms	Increased appetite. Bowels may move more freely, but rarely, if ever, nausea, vomiting or diarrhea.	Increased or ravenous appetite. Nausea, vomiting and diarrhea are not uncommon in crises.
6. Weakness	Usually present. Gradual onset.	Often profound. Weakness of quadriceps muscles, an important diagnostic sign. Complaint of weakness in thighs when attempting to step into street car or when asked by an examining physician to step up on a high chair.
7. Heat Intolerance	Usually present.	Often marked. Patients want house cooler, than the remainder of the family, and want less covers than their marital partner.
8. Tremor	Usually present.	Often so marked that patients drop articles of food or clothing.
9. Personality	Usually no marked change other than nervousness.	Frequently marked psychic and emotional changes.
10. Eye Changes	None.	None or all of thirty eye signs may be present. The more common are: staring expression, widening of the palpebral angle, exophthalmos, lid lag, and increased frequency of blinking. In severe cases, bruits may be heard by placing the stethoscope over the closed eye.
11. Skin	Flushed, warm, and moist.	Same, but usually more marked. Vasomotor instability common.
12. Nail Changes	None.	Nails may become brittle and separate easily from nail bed.
13. Heart	Rapid rate and often auricular fibrillation. More apt to be myocardial degeneration with congestive heart failure and permanent cardiac damage, because the patient is usually more advanced in years and the disease of longer duration.	Marked functional changes with rapid rate and irregularity. Loud murmurs frequently heard over the entire precardium. Increased pulse pressure. Unless complicated by definite cardiac lesions arising from conditions other than the goiter, the heart usually returns to normal after the thyrotoxicosis has been relieved.
14. Basal Metabolic Rate	Usually moderately elevated, but quite variable in individual cases.	Often markedly elevated, but quite variable in individual cases.
15. Changes in the Thyroid Gland	Nodular and usually asymmetrical enlargement. Occasionally substernal. May produce pressure symptoms. (Adenomata do not produce toxic symptoms unless more than 3 cms. in diameter). Microscopically, encapsulated or non-encapsulated adenomatous tissue may be found, the remainder of the gland being normal or colloid.	Usually moderate or marked symmetrical enlargement, but may be only slight. Bruits often heard over thyroid vessels. Microscopically, diffuse intra-acinar hypertrophy and hyperplasia are seen to involve the entire gland. Adenomata may also be present.
16. Response to Iodine Medication	None.	Usually a marked clinical improvement with lowering of basal metabolic rate. Bruits may disappear in eyes and thyroid gland.

administration of iodine to exophthalmic goiter patients over a prolonged period of time would produce a condition known as "iodine-fast", and thus deprive the patient of the only opportune time for surgical interference. This teaching appears to be incorrect. Exophthalmic goiter is characterized by a tendency toward periods of partial remission and exacerbation of symptoms terminating in crises. Plummer teaches that these will occur regardless of whether iodine is administered or not, but if iodine is administered the symptoms will be less severe at all times. I do not wish to minimize the importance of urging these patients to submit to operation; however, if operation is contraindicated because of some complicating disease, they should not be deprived of the benefits of iodine. Crile, agreeing with the theories of Graham, for many years made no attempt to differentiate between exophthalmic goiter and adenomatous goiter with hyperthyroidism but included both conditions under the general term "hyperthyroidism", and advised routine preoperative digitalization of all patients suffering from hyperthyroidism. Shirer, one of the co-authors with Crile of a book published last year, made the following statement: "Digitalis is used primarily in all cases in which there is evidence of myocardial weakness. It is of questionable value in cases of hyperthyroidism without myocardial insufficiency. In very severe cases of auricular fibrillation, digitalis is used". Plummer, after observing a large number of patients with thyrotoxicosis treated with and without digitalis, has practically discontinued its use. He believes that digitalis has a toxic cerebral effect separate from its cardiovascular effect. Crile also makes a great point of operating on severely ill patients in their rooms. This is done with the idea of avoiding the exertion and excitement of being removed to an operating room. Plummer and his associates insist on their patients being strong enough to be able to sit up and walk about their rooms before they are submitted to any surgical procedures. Much less postoperative reaction occurs if the patient is permitted to keep up his strength by a limited amount of exercise prior to operation.

I could in no way better present to you the common symptoms and signs of myx-

edema than by reviewing a case which recently came under my observation.

REPORT OF CASE

Case No. 26858. A woman, aged forty-five years, was admitted to the Norwood Clinic, February 7, 1933. Her chief complaint was weakness which had become so marked in the arms that she kept her hair cut short to avoid combing it. Other symptoms were generalized swelling, which was more marked in the abdomen, dyspnea on exertion, poor appetite, diminished sense of smell and taste, constipation, dry, scaly skin, loss of hair which had become dry and coarse, dryness of mouth, lack of thirst, absence of sweating, scanty urine, thick tongue, slowness of thought, speech, and movement, amenorrhea for ten years, mental depression, and intolerance to cold. These symptoms had come on gradually over a period of eleven years, during which time she had consulted eleven physicians and had been treated for pernicious anemia, ascites, nephritis, low blood pressure, pellagra, heart disease and dental sepsis. In 1922, after the extraction of a few teeth, there was severe hemorrhage from the gums. Since that time she has been treated with blood transfusions, adrenalin, digitalis, liver extract, iron, and numerous injections of cacodylate.

Upon examination there was found a marked thickening of the skin, especially of the face and eyelids, giving the patient an unattractive and aged appearance. The hair was dry, coarse and scant. The teeth were loose and badly infected. The tongue was thick, dry, reddened and fissured. The thyroid gland was not palpable. The heart appeared normal, except for diminution of the sounds. There was marked abdominal enlargement and the liver and spleen were not palpable. The knee and ankle jerks were of the sustained type which is found only in myxedema. The pulse rate was 74, the temperature 97.3, the systolic blood pressure 120 and the diastolic 86, the hemoglobin 70, the erythrocyte count 3,500,000, and the basal metabolic rate determination minus 56.

The response to treatment with desiccated thyroid has been characteristic of myxedema.

The only comment that I wish to make concerning this case is that the possibility of hypothyroidism should not be overlooked as a possible cause for an unexplained secondary anemia.

BIBLIOGRAPHY

1. Kendall, E. C.: Isolation of the iodine compound which occurs in the thyroid. *J. Biol. Chem.* 39: 125-146, 1919.
2. Plummer, H. S.: The inter-relationship of the function of the thyroid gland and its active agent, thyroxin, in the tissues of the body., *J. A. M. A.* 77: 243-247, 1921.
3. Marine, D., and Williams, W. W.: The relation of iodine to the structure of the thyroid gland. *Arch. Int. Med.* 1: 349-384, 1908.

4. Wilson, L. B.: The pathology of nodular (adenomatous) goiters in patients with and in those without symptoms of hyperthyroidism. *Am. J. M. Sc.* 165: 738-742, 1923.
5. Sloan, H. G.: Iodized salt in the prevention of goiter. *Ohio State M. J.* 17: 172-174, 1921.
6. Plummer, H. S.: Functions of the normal and abnormal thyroid gland. *Oxford Med., New York, Oxford Univ. Press.* 3: 839-873, 1922.
7. Graham, A.: Exophthalmic goiter and toxic adenoma: Clinical variations of a single disease. *J. A. M. A.* 87: 628-631, 1926.
8. Crile, George and Associates: Diagnosis and treatment of the diseases of the thyroid gland. Philadelphia, W. B. Saunders & Co., 1932.
9. Plummer, H. S.: Discussion following paper by Marine: The anatomic and physiologic effects on the thyroid gland of exophthalmic goiter. *J. A. M. A.* 59: 325-327, 1912.
10. Plummer, H. S.: Personal communication.
11. Plummer, H. S.: Use of digitalis in hyperthyroid cases. *J. A. M. A.* 84: 1868, 1925.
12. Pemberton, J. deJ.: Goiter: Management of the poor surgical risk. *Collected papers of the Mayo Clinic and the Mayo Foundation.* 21: 503-516, 1929.
13. Haines, S. F.: Pre-operative treatment of exophthalmic goiter. *Minnesota Med.* 12: 79-81, 1929.
14. Plummer, H. S.: The function of the thyroid gland. *Collected papers of the Mayo Clinic and the Mayo Foundation.* 17: 473-499, 1925.
15. Plummer, H. S., and Boothby, W. M.: Caborigenic action of thyroxin, *Am. J. Physiol.* 55: 295-296, 1921.

UROLOGIC PROGRESS DURING THE PAST TWENTY-FIVE YEARS

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Urology presents, by its rapid development, one of the most interesting chapters in the history of medicine. Historians of the earliest times chronicled the use of urologic procedures for the relief of urinary obstruction and vesical lithiasis, and years of necessity and ingenuity have contrived to produce and perfect a multitude of both methods and instruments of precision, causing the medical world to stop and marvel. From the era when soundings were made for the detection of vesical calculi, and a later era when bilateral exposure of the kidneys was practised for diagnostic purposes, the present day urology has gradually been evolved. We have come from darkness to light, and accuracy has been substituted for inaccuracy.

The members of my class who graduated in medicine twenty-five years ago at Tulane University of Louisiana boasted that we attended the only medical college in the South which had a professor of genito-urinary diseases. We received from this professor a one-hour lecture each week during our junior year, and worked two days per week for one semester in the genito-urinary ward of Charity Hospital. The work and lectures were ninety-five per cent venereology.

Schmidt rightly observes "that progress in urology is to be measured by outstanding scientific discoveries and their influences rather than by dates and periods"; so, before confining myself to the urologic progress of the past quarter of a century, it will not be amiss to call attention to the year 1879, which gave to us the discovery of the cause of gonorrhea, the Neisserian diplococcus, and the first public demonstration of the improved cystoscope by Nitz before the Royal Society of Physicians at Vienna. To these two events, we owe a great deal of our progress of the past twenty-five years, including refinements in diagnosis and therapeutics. These naturally followed a better understanding of the pathologic processes in the genito-urinary tract revealed through endoscopy and knowledge of the vagaries of the pathogenetic agents concerned.

The perfection of the cystoscope waited for Buerger, just twenty-five years ago. With it came the imperative need to restrict the field of urology to specialists; to adhere less closely to the irrigating nozzle or the optical end of the cystoscope. It became necessary for urologists to prepare themselves by training and experience in the surgical clinic to do better than the general surgeon could do it all major operative work on the genito-urinary organs. Thus only would urology become as well established as other surgical specialties in the public and professional mind.

The most potent force that has enabled urology to exert its influence on longevity has been its recognition as a specialty, whereby the public and the general surgeon alike have come to appreciate the significance and importance of certain symptoms and indications; to realize the value of prompt investigations and expert procedures. The specialty of urology has had

to struggle very hard indeed to throw off the mysticism, dogmatism, ignorance and superstition that have hounded it in the past, but the new deal in urologic progress has sent out spires scintillating high and magnificently in the heavens of the medical world.

In 1910, Edwin Beer revolutionized the treatment of papilloma of the bladder by the use of the high frequency current applied through the cystoscope. With improvements that have followed in both instruments and technique, multiple papillomata can be efficiently treated, the patient continuing ambulatory and capable of attending to his or her ordinary vocation. This highly important procedure can be carried out not only in comfort and safety, but should a recurrence appear it can be dealt with at the earliest possible moment without damage to the abdominal wall, urethra, or other part of the patient's anatomy.

The past twenty-five years can justly lay claim to some of the most important procedures in the domain of urologic diagnosis, as, for example, ureteral catheterization, the evaluation of kidney function, blood chemistry, urography, both retrograde and excretory, and cystography. Each of these procedures gives such definite and reliable findings that, to a large extent, they have obviated the use of long drawn out clinical methods. Further, they have become indispensable in arriving at a precise diagnosis, thus making of urology an exact specialty.

Catheterization of the ureters in the male was made practical by Albarran's modification of the Nitzi catheterization cystoscope, but in the beginning its use was not attempted by very many urologists. Today catheterization of the ureters in both sexes is almost routine. Such procedure has not only revolutionized the treatment of upper urinary tract infection but has also made accessible, early in the development of pathology, the realm of early diagnosis.

Kidney function evaluation and blood chemistry have both been developed during the period embraced in this resume, the one measuring the work the kidney is able to perform, the other measuring the work the kidney leaves undone. In 1910 Rountree and Geraghty described the phenolsulphonphthalein kidney function test

which is all but ideal. It provides a simple and efficient means by which the renal function can be reliably estimated by most any physician, without the necessity of elaborate laboratory equipment. Its chief value lies in the differentiation made between the efficiency of the two kidneys. In 1915, Dr. Oswaldo Schwarz of Vienna evolved a modification of the Mosenthal dilution and concentration test. This I consider the simplest and most accurate, if total kidney function is to be determined.

Folin and Dennis developed the blood chemistry technique which, in both health and disease, has proven of great value in the investigation of various substances in the circulation. Extensive use of these factors by the urologist guides him to a more correct prognosis. At the same time their employment is a beacon light pointing the way to a conclusion as to necessity for operative interference.

In all probability the roentgen ray has been the period's most definite and useful development in the diagnosis of conditions of the genito-urinary tract. According to Chute radiography has shown that acute pain, or vague pain in the upper abdomen, in the loin, or in the back, and occasionally pain that is typically gastric in type may be due to a kidney stone, the removal of which results in elimination of the pain. Occasionally symptoms produced by renal stones are so mild that routine radiography has become necessary in all cases presenting, with or without cystoscopy as the judgment of the urologist directs.

In 1906, Voelcker and Von Lichtenberg advocated the use of colloidal silver as a fluid opaque medium for use in urography. In 1918 Cameron suggested the use of sodium iodide, and Weld followed by suggesting sodium bromide. In 1923 Rountree published the first positive results in excretion urography, proving conclusively that intravenous urography was possible and that full clinical success awaited only the finding of a satisfactory contrast substance. Later, Binz, working in the clinic of, and under the direction of, Von Lichtenberg selected a compound called *uroselectan*. Further study evolved a concentrated solution which is used by most urologists today under the name of *neo-icopax*.

According to Von Lichtenberg, clinically speaking, intravenous urography is indi-

cated where cystoscopy is impossible, where ureteral obstruction prevents the injection of the pyelographic solution beyond said obstruction as well as those cases where instrumental pyelography carries risk for the patient.

Pneumoradiography of Rosenstein deserves to be mentioned in connection with investigations of the kidney, but it is not used universally enough to permit one to evolve any definite opinion as to its value. I saw it used in Buenos Aires by Dr. C. Calles and his pictures were so clear that the kidney seemed as close as though held in one's hand.

Before leaving the subject of pyelography I wish to mention the work of Dr. T. D. Moore. His use of serial pyelography has given added exactness to diagnosis of conditions within the kidney pelvis.

Cystography, another development of recent years, is a great aid in the visualization of pathologic conditions. This procedure will reveal the number, size and location of bladder diverticula. Further, should the pathologic condition be a large tumor or other obstruction that renders cystoscopy useless, cystography is indispensable. The importance of early recognition of bladder diverticula is emphasized by the report of Judd and Scholl. They state that in 1894 the mortality from this condition was 83%. Today, due to modern methods that permit of early diagnosis, the mortality is less than 8%. As a medium for cystography, Ballenger and others have used air with remarkable clearness of existing pathology where prostatic or tumor enlargement encroaches within the viscus.

Great advances have been made also in the treatment of bladder disturbances and incontinence in women. These include the different plastic operations, the vesicovaginal interposition of the uterus, and the implanting of the uterine cervix in the anterior fossa of the levator. The masterly treatise of Folsom on the female urethra, likewise, represented an important step forward.

It has been proven beyond doubt that a close association exists between pathology of the urogenital tract, and disturbed physiology and pathologic lesions in other organs of the body. We must, therefore, take a careful history and make a thorough physical examination, due stress being laid

on the comments of the doctor referring the case. Such personal contact broadens one's vision, enhances the service of the urologist and promotes better care of the urologic patient. It was a wise man who said that a urologist should first be a neurologist; numerous bladder symptoms, to greater or less extent, are due to spinal cord pathology.

An important contribution to the treatment of chronic renal infection has come from the Mayo Clinic. There it was observed that patients on a diet high in fat (ketogenic diet) excreted a very acid urine, from which colon bacilli, in cases of chronic infection, tended to disappear. The use of such diet may be of great help in the treatment of colon pyelitis.

Because of increased knowledge of urologic pathology in adults, treatment of urologic conditions in children has shown a marked advance in the past quarter of a century. Congenital lesions of the urinary tract are not uncommon. Many children die with unknown conditions, some of whom could have been saved by proper urologic study, if we are to believe the reports of the pathologist. Malformations, which might have been corrected if they had been recognized early, often are not discovered until permanent kidney damage has resulted. Pediatricians and general practitioners do not seem to realize sometimes that cystoscopy in children is as satisfactory as in adults. By means of the cystoscope more careful examination and study may be accorded these young patients; and existing pathology cleared up by proper and adequate treatment of conditions appearing at any time after birth. The female child should always be catheterized and can be easily. Urinary findings are inaccurate otherwise.

The urologist's opinion of the proper care of venereal diseases is in favor of prevention rather than therapy. We believe that sane instruction in sex hygiene would go far toward controlling the spread of these diseases. We must stress the fact that certain fixed principles of maintaining our bodies in good health are of value and must be observed. Proper intake must be balanced with body elimination. Exercise must be had. Focal infections should be prevented by proper attention to teeth and tonsils. Tuberculous foci should be dis-

covered early. Our adherence to these principles will go far toward eliminating the urologic lesions of early adult and middle life, the chief of which are kidney infections, calculi and tuberculosis. Infections of the childbearing period will be prevented for the most part by a careful study of the urinary tract early in pregnancy and by eliminating the factors which are the cause of kidney infections.

The urologist should not arouse false hopes; a conservative position will instill in the mind of the laity confidence in our knowledge and stability. He should bring his patients to an appreciation of periodic examinations and of urinalyses. Thus would many lesions be discovered and eradicated in their incipience. Such procedures are of untold importance in revealing prostatic disease, new growths, calculi and infections.

By manipulations with the ureteral catheter most ureteral calculi may be dislodged. In 1923 I reported a case of cystin stone in the kidney which was successfully dissolved by alkalization, internal and retrograde. Other urologists have reported similar cases. It is not at all unlikely that within the next decade further study of urinary calculi will prove most if not all of them to be medical rather than surgical.

The reduction from fifty to less than five per cent in the mortality from prostatectomy is another great advance in the domain of genito-urinary surgery. We were not satisfied. The work of Young, Caulk, Collings, and Stern, followed by Davis, McCarthy and others, has brought revision forward within the past few years to the point where these cases are hospitalized for only a few days. The urinary function is restored promptly, with comfort and with a still further reduction in the mortality rate. Revision is admitted by the most skeptical as being the method of choice in dealing with small obstructions, as a fibrous prostate, a median bar, or that due to malignant disease.

In conclusion I wish to quote Caulk on the present status of the urologist: "Having demonstrated the ability to execute the highest type of urological surgery, and at the same time reduced the necessity for it, has been a beautiful part of urological progress, and typifies what we may call moral excellence, the bright consummate flower

of all progress". The present day cry of "over-specialization" is fraught with great danger, according to Thomas, second only to the attempts to subjugate urology to general surgery. Statistics as long as the eye can reach can readily be produced to prove the fallacy of this contention. Cabot has said, and aptly so, that "the best results will fall to the surgeon who supervises from beginning to end the investigation and who applies the remedy, rather than to the operator, who may be eternally confounded by the error of an assistant". These facts should prove to the mind of most of us that division of responsibility, oftentimes, is bound to effect the best welfare of patients.

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BIBLIOGRAPHY

- Anderson, C. F.: Evolution of urology, *J. Tennessee M. A.* 23: 400-406, Nov. '30.
- Barret, J. D.: Urological factors in reduction of surgical mortality, *Colorado Med.* 25: 153-155, May '28.
- Buerger, L.: Historical survey of development of modern urological instruments, *Urol. & Cutan. Rev.* 35: 1-25, Jan. '31.
- Bugbee, H. G.: Present scope of urology, *J. A. M. A.* 81: 793-794, Sept. 8, '23.
- Caulk, J. R.: Our silver anniversary; celebrating our contributions to renal surgery, *J. Urol.* 18: 137-144, Aug. '27.
- Colby, F. H.: Progress in urology, *New England J. Med.* 204: 1152-1164, May 28, '31.
- Folsom, A. I.: Female urethra; clinical and pathologic study, *J. A. M. A.* 97: 1345-1351, Nov. 7, '31.
- Fullerton, A.: Campbell oration on progress in urology, *Lancet* 2: 1345-1351, Dec. 28, '29.
- Grant, O.: Position of urology in progress of medical science, *Kentucky M. J.* 28: 578-851, Nov. '30.
- Grantham, W. L.: Has urology reached place it should occupy in relation to general medicine and surgery? *South. M. J.* 24: 136-138, Feb. '31.
- Hamer, H. G.: Short sketches of work of eminent western urologists (president's address, American Urological Association), *J. Urol.* 22: 593-602, Dec. '29.
- MacKay, A. E.: Pioneer urologist, *J. Urol.* 24: 329-331, Sept. '30.
- O'Neil, R. F.: Presidential address; 25 years after, *J. Urol.* 20: 147-154, Aug. '28.
- Reaves, J. U.: Treatment of cystin stone, *Southern M. J.* 18: 599-603, Aug. '25.
- Schmidt, L. E.: Urology during past 20 years, *Surg. Gynec. Obst. (Internat. Abstract Surg.)* 40: 457-460, June '25.
- Stang, H. M.: Urology; its trends, *Wisconsin M. J.* 28: 101-104, March '29.
- Thomas, B. A.: Influence of urology in longevity, *J. A. M. A.* 86: 1957-1959, June 26, '26.
- Weinberg, M.: (Sumter), Specialty of urology, *J. South Carolina M. A.* 25: 345-347, March '29.

THE TREATMENT OF MALARIA
WITH ATABRINE*

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This paper will be a brief review of the literature concerning atabrine in the treatment of malaria, with a report of thirty-four cases treated by the writers at the Hillman Hospital during 1933.

Atabrine is a powder of intense yellow color and soluble in water to the extent of seven per cent. When placed on the tongue for a few moments a bitter acrid taste develops. It is neutral in reaction. It passes through the intestinal tract and kidneys without decomposition, and can be demonstrated in the feces and urine by a simple test. The excretion is slow, probably extending over several weeks. One writer reports finding heavy traces present in the feces and urine thirty-six days after treatment. Atabrine is combined with an inert substance and given by mouth, in tablet form. Each tablet contains 0.1 gm. of atabrine. The dose used in treatment of quartan and tertian malaria is one tablet three times daily for five days. In estivo-autumnal malaria, plasmochin must be combined with atabrine.

Thonnard-Neumann and LeDoux¹ reported seventy-five cases of malaria treated with atabrine. Of these, there were fifty-nine estivo-autumnal, ten tertian, and six mixed (estivo-autumnal and tertian). The treatment consisted of the oral administration of atabrine 0.1 gm. three times daily for five days. In 123 re-examinations of the forty-three patients, extending over a period of nine weeks after treatment, only three relapses were observed. They were manifested by the reappearance of a few rings in the blood within two days after the five days of treatment had terminated, and without the return of clinical symptoms. In estivo-autumnal or subtertian malaria, atabrine destroys the schizonts, these usually disappearing in four or five days. No effect is exerted on the gametes. Hence in this type, which com-

posed fifty-nine cases in this series, it was necessary to combine atabrine with plasmochin, the plasmochin being given in 1/6 grain doses three times daily for five days.

These authors report a cure of all seventy-five cases for three months after termination of treatment. No gastro-intestinal disturbances, or interference with pregnancy, or liver or kidney damage was noted. A rather intense yellowness of the skin was noticed in most of the clear skinned patients after four or five days of treatment, but the sclerae were not stained, and no bile pigments were found in the urine. The yellowness cleared up in about two or three weeks. Thirty of the fifty-nine patients in the atabrine and plasmochin series complained of "gas pains" in the epigastrium, accompanied by constipation. These pains were similar to the pains observed occasionally under plasmochin treatment alone, and occurred on the fourth or fifth day of treatment.

Cordes and De LaTorre² in Cuba reported one hundred twenty-one cases of malaria, one hundred fourteen estivo-autumnal, six tertian, and one quartan treated. They found no inconvenience to the gastro-intestinal tract. There was one patient, a girl with a neurotic temperament, in whom repeated vomiting occurred. No apparent bad effects were noted on blood pressure, white blood count, or urine. A yellowish tinge to skin was seen on one anemic patient on the third day of treatment, but cleared up one week after treatment was stopped.

Crescents apparently were not affected, even with prolonged atabrine treatment and they developed and remained in the blood, as occurs in cases treated with quinine. Of one hundred cases of estivo-autumnal, thirty-seven showed crescents at some time during the observation period.

All patients recovered, hemoglobin increased, and spleen tumors generally diminished in size.

Three patients relapsed after five, eight, and twelve weeks respectively, with fever and reappearance of parasites,—in one of these cases there was a probability of reinfection. Some of the cases could not be followed up and others were under observation too short a time; consequently the number of relapses cannot be stated in exact figures.

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It is interesting to note that their series showed nine cases of hemoglobinuria. In each patient the onset of the hemoglobinuria could be definitely linked with the intake of a dose of quinine. Atabrine was given these patients only when parasites were present or reappeared in the blood, which was generally five or six days after the paroxysm. In all instances the blood became free of parasites after the administration of atabrine. In no instance did atabrine provoke another attack of hemoglobinuria.

One case deserves special mention. A white Cuban boy, 13 years of age, had chronic estivo-autumnal malaria and suffered a severe attack of black water fever. Anuria persisted for 36 hours. The spleen tumor reached to the umbilicus; and the hemoglobin 24%. Ten days later there was a rise of temperature, and ring forms of estivo-autumnal parasites were present again in the blood film. Two (2) grains of quinine were given; and a violent paroxysm followed promptly, with a temperature of 104° F. and hemoglobinuria. The boy was in a serious condition. The hemoglobin dropped to 18%. Three (3) days later atabrine was given—0.2 gm. daily for three days. No untoward reaction ensued; the parasites disappeared; and he made a remarkable recovery. In three weeks his hemoglobin increased to 56%; and the spleen was reduced to a level with the rib arch. The case was followed for five months and no relapse occurred.

These writers were of the opinion that though quinine was far from being an absolutely perfect agent for the cure of malaria, it still holds the leading place in individual and mass treatment; and for good and substantial reasons.

They believe that certain requirements are fundamental for a remedy which is to be recommended and adopted for general use in the treatment of malaria. Thonard-Neumann and LeDoux state as follows: "Its action on the fever must be quick and reliable; it must prove efficacious in the prevention of relapses; its dosage should be simple, and its administration easy and without discomfort; its toxicity must be low, so that it may be taken without constant medical supervision. These conditions are fulfilled, in our opinion, by the new product, atabrine. We

have not seen one failure in one hundred twenty-one cases. Only the gametes of plasmodium falciparum do not seem to be affected.

"It must be stated, however, that relapses do occur in some instances; but our experience with the drug is not yet sufficiently extensive to enable us to reach any definite conclusions as to the percentages. We believe that 75% are definitely cured by one treatment."

Phelps and Jantzen³ treated one hundred twenty-four cases of malaria with atabrine, and had no relapses. 85% were estivo-autumnal and 15% were benign tertian. There were five cases of hemoglobinuria in patients who had taken quinine before admission. These patients were given atabrine, and no ill effects noted, so they concluded hemoglobinuria was no contraindication to the use of this drug.

The toxicity of atabrine was found to be low, with a wide margin of safety between the effective therapeutic dose and the toxic dose. No tinnitus and no gastro-intestinal upset was exhibited. These writers found that photo-sensibility did not occur, but did get a yellow discoloration of the skin, especially when treatment extended over five or six days. Atabrine seemed to have no destructive effect on the gametes in the blood, and for this reason it was supplemented with plasmochin.

Welch⁴ of Port-au-Prince, Haiti, reported three hundred twenty cases, in which atabrine was used, with no relapses during the six weeks observation period. Not one of the patients developed any of the common subjective symptoms regarded as sequels of quinine therapy, such as pains in the epigastrium, nausea, tinnitus, nervousness or vertigo.

One of Welch's⁴ patients was a Haitian woman, twenty-four years of age, with blood showing estivo-autumnal parasites and hemoglobin 45%. She was admitted to the hospital December 12, 1932. She was in the second trimester of pregnancy and owing to quinine therapy was obviously threatened with abortion. She gave a history of an abortion, due to quinine, two years before. The atabrine-plasmochin treatment was instituted and the temperature fell from 101.2° F. to 99° F. in 16 hours. In 24 hours all indications of eminent abortion had passed. Her tempera-

ture remained 99° for 72 hours and then became normal. Treatment was suspended after five days, the blood film then being negative and the hemoglobin 55%.

A. L. Hoops⁵ and colleagues reported three hundred seventeen cases of malaria treated with atabrine. Their relapse rate was 4.34 per cent. A comparison of the death rates among those treated in the hospital with quinine and with atabrine respectively was of particular interest. In 1931, nine hundred thirty-four cases of malaria were treated with quinine, with a death rate of 3.31 per cent. In 1932, two hundred eighty-eight patients were treated with quinine with a death rate of 4.85 per cent. In the same year, three hundred seventeen patients were treated with atabrine with a death rate of only 1.55 per cent. These figures favor atabrine treatment.

In our series of thirty-four cases treated with atabrine at the Hillman Hospital no relapses were noted. Atabrine gave uniformly good results. Twenty-six cases were tertian and eight were estivo-autumnal. Of this group, there were twenty-nine white cases—14 male, 15 female; and five colored cases—4 male, one female. The ages varied from ten to fifty-six, being an average of twenty-six years.

Fever lasted from four days to four weeks, an average of twelve days. Twenty-seven cases gave a history of one or more chills with elevated temperature, whereas seven gave a history of elevated temperature only. The average time of normal temperature was three days after treatment was started.

The treatment consisted of atabrine 0.1 gm. (1½ gr.) three times daily for five days in tertian. Cases of estivo-autumnal were given a course of atabrine with plasmochin tablets (gr. 1/6) three times daily for five days. No unpleasant subjective symptoms developed,—as tinnitus or gastro-intestinal disturbance.

Three patients, or 8.8%, developed a yellow discoloration of the skin which cleared up within two weeks. Cases who are treated five days or longer are more apt to develop discoloration of the skin. No liver damage was found.

Four patients (two estivo-autumnal and two tertian), or 11%, had positive smears at the end of the fifth day. Of these, three

had continuous fever and one case no fever after the second day. The cases of tertian cleared up on the second course of atabrine. The other two cases of estivo-autumnal were for some reason given quinine.

Three patients in our series were pregnant, all of whom were delivered in the hospital. There was no interference with pregnancy and each had a normal delivery. One of these cases was 29 years of age, and was admitted to the hospital on August 8, 1933. At this time her hemoglobin was less than 20% and red cells were 1,410,000. The blood smear showed estivo-autumnal parasites. She was given a transfusion, and put on the atabrine-plasmochin treatment. On August 16th the hemoglobin was 33%. On this date the patient was advised to remain in the hospital for further treatment of anemia, but she signed a release and went home. Another examination in the clinic on August 24th showed a hemoglobin of 49% and 2,760,000 red cells, and a negative malarial smear. The next and final examination of the patient's blood was on December 9, 1933, the day following delivery of a normal, well developed boy. Her blood showed 76% hemoglobin and 4,250,000 red cells. On this date the blood smear was again reported negative for malaria.

Six patients, or 17.6%, had taken quinine before admission to the hospital ranging from several doses to a full course. They all had elevated temperatures and positive blood smears when admitted. All were tertian and cleared up, with normal temperature by the third day. All had negative smears after the course of atabrine, except two cases which required a second course.

There were six cases, or 17.6%, in which the spleen was definitely enlarged. Atabrine in each case caused the spleen to rapidly diminish in size. It should be mentioned, however, that in chronic splenic enlargement little or no effect is noted on the size of the spleen.

All patients when discharged were asked to return to the clinic in one month for a re-examination of the blood. Five cases, or 14.7%, responded and gave a history of no further symptoms and a negative malarial smear. It is reasonable to assume that those who failed to return had no further symptoms.

CONCLUSIONS

1. Atabrine is easy to give and the usual treatment lasts only five days.

2. The toxicity of atabrine is low, with a wide margin of safety between the therapeutic and toxic dose.

3. There are no contraindications to the use of atabrine. It does cause a yellowness of the skin occasionally, but this is due to the staining qualities of the drug, and usually clears up within two weeks. There is no liver damage.

4. Atabrine can be used in pregnancy without fear of abortion.

5. As far as can be determined the drug does not provoke hemoglobinuria, and seems to be the best drug yet discovered to treat malaria in the presence of hemoglobinuric fever induced by quinine.

6. Vertigo, tinnitus, headache, nervousness, and gastro-intestinal disturbances were not observed in our cases.

7. Atabrine cures the tertian and quartan types of malaria. Plasmochin and atabrine are both necessary for the cure of the estivo-autumnal malaria.

8. In acute types of malaria the large spleens quickly diminish in size. There is little or no effect on the large spleen of chronic malaria.

9. The percentage of relapses is small.

10. As our experience with atabrine is limited, our results are not conclusive, but it seems highly efficacious and is recommended for general use in the treatment of malaria.

REFERENCES

1. Thonnard-Neumann, E. and LeDoux, H. A.: Treatment of malaria with erion (atebrin), a new synthetic drug, Report, Medical Department, United Fruit Co., 1931, pp. 57-69.

2. Cordes, W. and de la Torre, T.: First experiences with atebrin, a new antimalaricum, *ibid.* pp. 51-56.

3. Phelps, B. M. and Jantzen, W.: Clinical experience with atebrin, *ibid.* pp. 69-78.

4. Welch, R.: Treatment of malaria with atebrin, *Internat. J. Med. & Surg.* 46: 343-346, July '33.

5. Hoops, A. L.: Observations on cure of malaria with atebrin, *Brit. M. J.* 1: 993-995, June 10, '33.

6. May, W. J.: Atebrin in malaria, *South African M. J.* 6: 801-802, Dec. 24, '32.

RESUME' OF THE HISTORY AND PRESENT APPLICATION OF MEDICAL LICENSURE IN THE STATES*

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The jumbled heterogeneity—to say nothing of flagrant inconsistencies and incongruities—embodied in many state statutes in an effort to create regulatory measures for particular groups seeking to serve the public furnishes mute evidence for the need of an intelligent revamping of many state codes. Quickly upon the heels of organization comes the clamour before sympathetic and possibly well-intentioned legislatures for legal recognition of this or that group or cult and, immediately, there is laid into the state's lap another baby to be disciplined and regulated and likely subsidised. A joker is usually cleverly tucked away in the machinery of such bills which vests regulatory control within the particular group seeking legal recognition. Even a cursory survey of the various state codes reveals the fact that the above statement is particularly applicable to the numerous laws which seek to regulate practitioners of the healing art. All such laws fall into that hazy and vaguely defined realm wherein the police power holds uncompromising sway. "*Salus populi est suprema lex*"—the safety of the people is the supreme law—in the hands of our legal confreres, is as elastic and flexible as it is euphonious. In fact, it is the state's power of self defense and self protection in matters of public safety, health, education and morality. The Federal Constitution is silent on this subject. Each state and territory has sought to encompass it as exigencies arose and in a manner suitable to the then apparent needs of its own social group; hence, the lack of uniformity and coherence in our present licensure laws and the difficulties encountered in the effort to make them so.

Almost all courts are willing to assume that there is a medical science but some courts of great respectability and authority

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have held that it is beyond the power of the legislature to exclude any school of the science of medicine; that, in so far as all medicine is based on certain established laws and facts, knowledge of such laws and facts may be required of all, but when the necessary knowledge is shown in the manner prescribed by law, the practitioner is free to follow his own school. In some states, as for example Texas, there can be no discrimination between the so-called schools of medicine in the enactment of laws controlling the practice of medicine, at least as to qualifications of practitioners of medicine, and in such states multiplicity of boards are not constitutionally possible. Again, the supreme courts of some states have ruled that osteopathy, chiropractic, and other forms of drugless healing are not the practice of medicine, although in other states corresponding courts have ruled in exactly the opposite way. At least one court has denied the power of the legislature to establish scientific conclusions adverse to any school of medicine. It would appear that, in order to justify the prohibition of any system of practice, it must be established by general experience, as well as by clear, convincing and incontrovertible proof, that it is not only productive of no good results but that it may prove actually harmful. While the courts freely concede to legislatures the right to reasonably regulate occupations, it is only with reluctance that they sanction any attempt to prohibit any occupation not inherently evil or vicious.

Were it possible to proclaim *the science of medicine* to be an *exact science* and were not the practical application to the human body of the scientific facts upon which medicine rests so indissolubly woven into the *art of medicine*, the task of establishing a broad workable base line for all practitioners of the healing art would at once become much simplified. The *art of healing* harks back to man's very beginnings and comes to us down through the centuries wrapped in mysticism, superstition, supernaturalism, and unreasoning credulity; whereas the *science of medicine*, upon which must finally rest the imperishables of the healing art, has barely shed its swaddling clothes. The struggles now being staged in legislative halls and elsewhere are but the clashes between science and pseudo-

science; or, if one may be permitted to borrow adjectives whose particular significance attaches to things of faith, the clashes between orthodox medicine on the one hand and heterodox healing on the other; and these will likely continue so long as human behavior—and more particularly human behavior in the mass—remains a thing of the emotions rather than of logic.

That, ultimately, truth will prevail, no one doubts; but, until such time arrives, little seems left to orthodox medicine other than make-shift legislative compromise and educative persuasion. In every approach made by orthodox medicine to the legal phases of licensure, sight must never be lost of the fact that the protection of the public, and not of the profession, is the sole justification for such laws. As one reviews the evolution of licensure as applied to the healing art—which is as old as civilised man—it may be truthfully said that a spirit of altruism and what seemed best for the public weal, rather than group greed or aggrandisement, largely dominates the picture; although instances occur, more especially in the earlier state laws, where such seemed not to be the case; as, for example, where permission to the ignorant and unqualified is given to practice but not to receive compensation; and the rather drastic prohibitions imposed upon homeopaths, Thompsonians and eclectics.

Following upon the Civil War, this country experienced a rapid expansion of our civilisation westward to the Pacific Coast and a pronounced influx from foreign shores, with a consequent phenomenal increase in both population and community growth. Synchronous with this physical broadening are also to be seen epoch making discoveries in bacteriology, pathology, physiology and other kindred sciences upon which medicine so heavily leans. Under these conditions and with the demand greater than the supply, the quite natural thing happened: In order to meet this sudden demand there sprang into existence, not only many factories for supplying the supposedly orthodox medical product but also many others, producing by-products of pronouncedly heterodox and unacceptable taint. Had this condition been permitted to drift uncurbed one must need tremble for the future of medicine in the United States. At this juncture orthodox medicine, in a

spirit characteristically altruistic, did two important things.

First, it set itself seriously to the task of sponsoring and of furnishing the leadership for the creation, in the various states, of some sort of machinery into which would be incorporated a minimum yardstick with which to measure all who assayed to treat diseases of human beings by any method or system whatsoever. Thus came into being in the states the medical licensing boards for all who proposed to practise the healing art. In practically all of these laws we now see more clearly defined the basic fact that the application of any mode of treatment to the human body must rest upon at least an elementary knowledge of the structure of its component parts, as well as the changes which may take place as a result of disease; in short, a working grasp of those sciences which form the keystones to the arch of orthodox medicine. This attitude, while it served to draw the line of cleavage more sharply between orthodox medicine and heterodox healing, likewise served both to strengthen our position, that the protection of the public interest is paramount and the sole justification for regulative laws, and also to more clearly show to lawmakers that any restrictive legislation on their part must be founded on the public weal.

For more than forty years, during this slow, formative period, and serving as a governor to the machinery of the States, this Federation and its progenitor, the National Confederation, have stood by, aiding and promoting better and more standardised legislation. True enough, glaring imperfections and discrepancies still exist; but it cannot be denied that credit for much of the headway made belongs to organised medicine co-ordinated and harmonised through the efforts of this Federation.

The second important service contributed by organised medicine was an appreciation of the fact that all was not well within its own house and the sturdy effort put forth to right its own defects.

In 1900, this country boasted 160 medical schools, some of which were more frankly commercial than scientific, with a few that were notoriously unsavory. To-day it boasts but 77; in 1905 only five of the 160 exacted any premedical college training, whereas to-day every recognised medical school requires at least two years of college

work and several demand a college degree for entrance to the study of medicine. The history of this accomplishment is interestingly set forth in the recorded annals of the Association of the American Medical Colleges, organised in 1891; of the Council on Medical Education and Hospitals of the American Medical Association, organised in 1904; and of the Commission on Medical Education, organised in 1925. Within the span of less than four decades, these forces working in unison and voluntarily, have so elevated the standards and cultural content of orthodox medicine as to leave to licensing boards little else than the unpleasant task of wrestling with the problems involved in the followers of heterodox healing and the disciplining of those already in the ranks. That this is so is evidenced by the revision of the constitution and by-laws of the Federation in 1930 to read as follows:

"In all matters of premedical education, courses of study, and educational requirements for the degree of Doctor of Medicine or its equivalent, the Federation recognises the Association of American Medical Colleges as the standardizing agency for this purpose.

"The Federation regards as its proper function (a) the determining of fitness for the practice of medicine, and (b) the enforcement of regulatory measures".

In the light of what has been stated above and thinking in terms of licensure for all who practise the healing art, let us ask ourselves the question, What are some of the perplexing problems now confronting us and what should be the method of approach?

The leadership and interest of organised medicine cannot be permitted to lag; without it the high ground gained will be lost and the public interest will ultimately suffer, as a consequence. The variations in educational requirements for orthodox practitioners, now found in some of the states, should, as quickly as possible and by such means as may be necessary, be brought into line with the standards fixed by the Council on Medical Education and Hospitals for grade "A" medical schools. Insistence on complete uniformity for regular practitioners in the matter of exacting proper premedical training will, in the long run, have a wholesome reaction both on the public and on legislatures. Those states

requiring only a high school training for orthodox practitioners, such as Massachusetts, Delaware, Missouri and Wyoming, should not rest content until their educational requirements have been properly raised. Organised medicine must ever bear in mind that the problems involved in medical licensure are largely problems of public enlightenment on matters of a technical and scientific nature, which, to be sound, must have proper guidance. It would seem therefore, that these educational differences within our own ranks should quickly be given proper consideration and rectified. This should not be a difficult task and its persuasive and uplifting values will prove to be a real weapon for stressing the educational content of all medical licensure.

That each succeeding generation has its own peculiar problems to solve is rather strikingly brought out in a study of the evolution of licensing boards in this country. In order to have at hand late authentic data for basing any statements or conclusions which might be made, a questionnaire was sent to all licensing boards. Upon these returns, together with other available material the succeeding comments on the present status of licensure are largely based. Because of the many forces at play, any attempt at classification is both baffling and unsatisfactory. The following, while largely arbitrary, may prove enlightening and possibly helpful:

(a) *Pure*: Those states having but one board passing upon all applicants for the healing art, the personnel of the board selected by organised medicine and being one hundred per cent regular or orthodox.

Alabama is the only State falling into this group; no applicant is examined in materia medica nor as to any particular method or system of treatment; in the case of heterodox healers the educational qualifications exacted of regular practitioners are waived. The legislature of Alabama, in 1875, entrusted to the organised medical profession of the State the direction and control of both public health and medical licensure as well as the enforcement of its medical practice act. Thus far, and despite frequent effort to change, it has withstood all assaults.

(b) *Composite*: Some two or more generations ago the disturbing factors in uniformity came from homeopathy, ec-

ticism and the botanics, which might be viewed as legitimate off-shoots of the orthodox parental tree, inasmuch as *treatment*, rather than *basic knowledge of fundamentals* furnished the line of cleavage, and graduates of these schools bore the title of "doctor of medicine". In the composition of boards created at about this time and continued down to the present, we find provisions made for these by incorporating one or more members of these schools into the personnel of the examining boards. At the beginning of the present century there had been or were in operation some forty-one (41) homeopathic and twenty-four (24) eclectic schools, twelve of which were located in the State of Ohio alone. At present, the list of the medical schools approved by the Council on Medical Education and Hospitals bears the names of but two such schools. Furthermore an analysis of the data at hand shows fifteen states making provision on their boards for one or both of these groups. In the face of these facts, and bearing in mind the need for stressing adequate training in the fundamentals of medical science rather than the form of treatment, has not the time arrived for these boards to so adjust such comparatively minor internal differences as to present to the public and to legislatures a solid and united front for orthodox medicine? Here again, by so doing, the educative values inherent in licensure could be materially strengthened.

(c) *Mixed*: States on whose boards representation is given either to osteopaths, chiropractors, or to other limited practitioners of the healing art. Osteopathy, the child of Dr. Andrew Taylor Still, a regular, of Kirksville, Missouri, received its legal christening in Vermont in 1896, as a separate school of the healing art. The exaggerated importance attached by this school to vertebral displacement and nerve impingement seems to have caught the popular fancy; for we quickly see the grotesque mimicry of its manipulative therapy forming the sole basis for the creation of numerous heterodox systems having no scientific leg upon which to stand, such as chiropractic, naturopathy, and many others. These mixed boards unquestionably represent compromise measures on the part of orthodox medicine; as do multiple and basic science boards shortly to be referred

to; a compromise of ideal standards for training and culture for all practitioners of the healing art in the face of a commercialised social order. It does not, however, necessarily mean a lowering of the high educational and ethical standards which should be required of all regular practitioners. At present there are fifteen such mixed boards, most of which, while varying in personnel and in scope of activity, are meeting and solving their problems in a satisfactory and harmonious manner.

(d) *Multiple Boards*: Those states having separate boards for the various schools practising the healing art.

Into this group, according to the questionnaire, eighteen states fall. Clearly here we have the first line of defense created by orthodox medicine for medical licensure battered down before the onrush of the followers of heterodox healing. In such states, while the high standards for regular practitioners may be preserved, the public interest is likely to suffer because of the absence of a trained, guiding hand in such matters; indeed, it is quite possible that, in some states, this condition has arisen from failure on the part of organised medicine to provide adequate leadership in legislative emergencies. As aptly expressed by Dr. Crowe, "A multiplicity of standards is likely to result in an absence of standards". It may well be that an appreciation of the absolute necessity for minimal educational and scientific training, in states now having multiple boards, has led to the more recent experimental venture of:

(e) *Basic Science Boards*: The first of these boards were established in Wisconsin and Connecticut in 1925 and there are at present nine states operating under some plan whereby a "base-line" of the fundamental sciences is set for all who propose to practise the healing art. While sufficient evidence and testing have not yet accumulated to justify final conclusions regarding this newer venture, this Federation should, through free discussion and its official bulletin, continue to point out both the merits and demerits of such a plan for the guidance of those states which may be seeking an improvement of present unsatisfactory conditions. Certain it is that in any such scheme the machinery for operation should provide for personnel unencumbered by political intrigue and capable and

willing to uphold decent scientific standards within the base-line set up.

And now a final word concerning the National Board of Medical Examiners, the aristocrat of medical licensure and the fulfilment of the goal fixed by orthodox medicine for a single yardstick in the hands of one scientifically trained board. The fact that practically all states, in which there are no legal inhibitions, have hastened to give recognition to the diplomates of this national, unofficial board, attests appreciation of the splendid work being done within the ranks of organised medicine to unify and elevate the standards of medical practice. An analysis of the replies in the questionnaire, as to the feasibility of ultimately having some sort of measuring rod of national recognition, reveals a diversity of views on this question, ranging from hearty approval to wholesale condemnation. Although the legal barrier of "states' rights" and the present complexities of licensure existing in most states, growing out of the medley of heterodox practitioners, seem now to preclude the immediate adoption of such a plan, its manifest advantages, if pitched on a sufficiently high plane, constitute ample ground for encouragement on the part of the groups here presented. It not infrequently happens that beneficent and far-reaching effects result from sound, persistent effort even though voluntary and unofficial; and such may prove to be true in the case of the National Board of Medical Examiners.

Such, in bare outline, is the status of medical licensure to-day. Within its own ranks, organised medicine must continue its purifying activities until complete unison is attained. This should not be difficult; and once accomplished, it should prove a potent lever to lift to a higher level the standards of all who presume to undertake the sacred task of dealing in human life. As the standards are lifted the unfit will fall by the wayside.

Referred Digestive Symptoms—In the genital apparatus, among the examples of referred symptoms are unrecognized and early pregnancy quite often treated as a gastric neurosis; and the severe gastric symptoms, usually anorexia or intractable vomiting due to a retroflexed uterus, especially in young neurotics. Of course we all know how frequently salpingitis, an ovarian cyst with twisted pedicle or a ruptured extra-uterine pregnancy is mistaken for acute appendicitis.—Brown, South. M. J., June 1934.

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PULMONARY COMPLICATIONS DEVELOPING AFTER FRACTURES

Pneumonia and embolism are the two types of pulmonary complications met with after fractures. Embolism is relatively rare, but may occur after fractures as after any other surgical procedure and is due to the dislodgement of the clot in a thrombosed vein and the passage of the clot through the right side of the heart and into the lungs where it blocks the pulmonary artery to a variable degree. In cases with small emboli only branches of the artery are blocked and the result is a localized infarct in the lungs accompanied by pain in the chest and usually by a pleural friction rub. With large emboli the entire artery may be blocked and the patient may die almost instantly.

Pneumonia after fractures occurs most frequently in aged and debilitated patients, and especially in those the nature of whose injury necessitates immobilization in bed in recumbency. It is so frequent in fractures of the hip in old persons that it is the chief cause of death in this injury, where the mortality is about 15 per cent. The most frequent type of pneumonia is a bilateral hypostatic congestion of the posterior portions of the lungs which gradually increases and terminates in a widespread bronchopneumonia with moderate fever and

progressive weakness. The best prophylaxis against this type of pneumonia is treatment of the fracture so that the patient may be turned on the face in a plaster cast about four times a day. If it is treated by traction the patient should be propped up in bed for a good part of the time. This pneumonia often terminates fatally; naturally, the progress of the condition is favored by prolonged recumbency.

In other aged patients there may result generalized bronchitis without marked hypostatic congestion; this may terminate in a widespread bronchopneumonia. More rarely there may occur a rapid and severe lobar pneumonia which progresses to a crisis and may terminate either fatally or in recovery, just as does lobar pneumonia in patients who have not had a fracture.

H. E. C.

TOBACCO, ALCOHOL AND ANGINA PECTORIS

"The relationship of the use of tobacco and of alcohol to angina pectoris is a matter of widespread interest and great importance, and yet it continues to be merely a topic for idle speculation and medical gossip. No extensive and reliable data have been published to throw light on it, although occasional remarks and opinions have been expressed in accounts of this symptom of angina pectoris, or if statistics have been presented they have been either inadequate in themselves or else inadequately controlled." Thus do White and Sharber¹ state their reasons for inquiring into what part, if any, alcohol and tobacco play in the causation of angina pectoris. They have analyzed their own series of 750 cases of angina pectoris extending over a period of twelve years and, as a control, have studied a similar number of individuals of the same sex and age incidence and from the same walks of life who did not have angina.

"Our observations have shown a somewhat higher percentage of total abstainers from tobacco among the patients with angina pectoris than among the individuals without angina pectoris (46.1 per cent as compared to 37.2 per cent) and a some-

1. White, Paul D., and Sharber, Trimble: Tobacco, Alcohol and Angina Pectoris, J. A. M. A. 102: 655 (March 3) 1934.

what lower percentage of persons using much or an excessive amount of tobacco in the angina pectoris series than in the control series (24.4 per cent as compared to 33.5). One may simply conclude from these figures that past habits of tobacco smoking are not primarily responsible for angina pectoris." They also found that occasionally patients stated that the omission of tobacco would reduce the frequency of anginal attacks, but that it was extremely rare for attacks to cease altogether when they stopped smoking.

"Total abstinence from alcohol was the history of 64.4 per cent of the cases of angina pectoris and of 61.7 per cent of the control series. Only eight of the 750 patients with angina pectoris (1.1 per cent) drank considerable or excessive alcohol and only one of them drank very heavily, while sixty-three individuals (8.5 per cent) of the control series drank much alcohol, four of them very heavily." They also state that a number of the patients referred to the relief which they obtained from alcohol and they remind us that alcoholic drinks have been used to relieve anginal pain since they were first advised by Heberden more than 160 years ago.

The Boston writers are to be commended upon their levelheaded and dispassionate investigation of a subject which has, all too often, been studied and discussed from the emotional rather than the scientific attitude. Many physicians, athletic trainers and a large section of the general public have always been dogmatic and adamant toward tobacco and alcohol, as well as coffee, tea, and many other things, and the lurid descriptions of their harmful effects have been tremendously exaggerated, to say the least. Further studies similar to the above will aid greatly in substituting knowledge and fact for fancy and prejudice.

And, meanwhile, White and Sharber's conclusion that "it appears from this study that neither the use of nor the abstinence from tobacco or alcohol plays an important part in the genesis of angina pectoris" will be quite comforting to the multitudes who ardently believe that mankind's lot is made happier by resorting temperately to the weed and the grape.

W. W. W.

PERTINENT FINANCIAL FACTS REGARDING ALABAMA'S HEALTH DEPARTMENT

The maximum appropriation for all health work in Alabama, reached in 1930-1931, was \$686,383.00. This included the State subsidy to counties organising for full-time health work and had been computed on the assumption that, by 1931, all counties would be organised. This goal was never reached, the maximum number of organised counties being 54 of the 67. At the end of each fiscal year the unexpended balance was returned to the State. In 1931-1932 the department returned an unexpended balance of \$85,115.50. This maximum appropriation would represent a per capita expenditure of about 25c—the price of 5 packages of chewing gum or the cost of building a little more than 20 miles of concrete highway.

The first extra session of 1932 of the legislature reduced this appropriation of \$686,383.00 by 41.7% or to \$400,000.00. This would represent, if the full \$400,000.00 became available, a per capita cost of about 15c—the price of three packages of chewing gum or the cost of building less than 13 miles of concrete highway.

The health department's budget was immediately revamped to meet this reduced appropriation. In the meanwhile, the State's income and revenue were daily shrinking and diminishing. This situation necessitated the second extra session of 1933, at which time the Budget and Financial Control Act became law. This makes it impossible for the State to exceed its income and further provides, in the event of a deficit, for a proration of available funds amongst the several departments of state. Upon this proration basis there became actually available to the health department during the fiscal year 1932-1933 but 58% of the \$400,000.00 or \$235,675.13. This represents a per capita expenditure of 9c—less than the cost of two packages of chewing gum or the building of some 8 miles of concrete highway.

The following figures are interesting:

Total receipts, State of Alabama, fiscal year ending September 30, 1933.....	\$33,666,016.74
Percentage spent for operation of highway system	41.9
Percentage spent for education, educational and eleemosynary institutions.....	21.6
Percentage spent for convict system.....	5.9
Percentage spent for health.....	.73

The outlook for the present fiscal year for all health work, as estimated by the Comptroller's office, will hardly exceed 60

to 65% of the reduced appropriation of \$400,000.00 or around \$250,000.00.

J. N. B.

THE ASSOCIATION FORUM

(Under this heading will appear, from time to time, as occasion may arise, contributions having a direct bearing on the general policies, functions and interests of the Association. Articles submitted should be of an impersonal nature.)

ALABAMA AND THE TUBERCULOSIS CONTROL PROGRAM

By

J. N. Baker, M. D., State Health Officer
and

R. Alec. Brown, M. D., Clinician
State Department of Health

What constitutes a well-rounded tuberculosis control program? What has Alabama done along control lines? What have other states done in this work by way of comparison? This article attempts to partially answer the above questions and to stress the need for further tuberculosis work in this State.

The control of tuberculosis is not to be confused with eradication of the disease, although proper control should eventually result in eradication. Proper tuberculosis control requires that every existing case of the disease have a proper diagnosis and classification; that all manifest treatable cases of pulmonary tuberculosis be given the necessary therapeutic care; that manifest untreatable cases of pulmonary tuberculosis be adequately isolated from the non-tuberculous; and that all latent cases of pulmonary tuberculosis and the contacts of all cases receive proper study and periodic observation. Inexpensive x-ray facilities, adequate use of laboratory diagnostic aids, economical provision of institutional bed space and dispensary service, a well informed medical profession prepared to apply, in suitable cases, surgical therapy and an educated public are the prerequisites of such a well-rounded tuberculosis control program. Unfortunately, in tuberculosis control there is no alternative for the early diagnosis and proper care, such as is available in other communicable diseases which lend themselves to immunization and drug therapy.

Prior to the fall of 1930 only the laboratory aids to the diagnosis of pulmonary tu-

berculosis were provided by Alabama. In October 1930, plans were made and policies formulated for the operation of a traveling chest clinic to be operated by the State, with the physicians and the respective county health departments co-operating. It was realized that early diagnosis is the first absolute essential to any tuberculosis control program and that a large majority of the State's population was unable to secure private diagnostic consultation service. By providing such consultation service for general practitioners and their patients it was hoped that the public health would be safeguarded, that the sick individual would have a better chance for recovery and that the various communities could be aroused to further tuberculosis control work. The accumulation of statistical data was also considered quite important.

January 1, 1931 saw in operation a tuberculosis clinic personnel of two clinicians, four nurses, a secretary, and a technician with four cars for travel, two portable x-ray units and equipment necessary for examining 100 patients per week. In July of 1931 a third clinician was added to the staff. In January 1932, one of these went with the Rockefeller Foundation, and in February 1932, a second clinician left to enter private practice. In April 1932, a clinician was secured to fill this last mentioned vacancy, and in the meantime the secretary had been dropped. In November 1932, the economy program caused the loss of two nurses and the remaining two clinicians and two nurses were obliged to use two cars for travel. In April 1933, lack of funds caused a discontinuance of all tuberculosis work. October 1933 saw a resumption of the tuberculosis consultation service with one clinician, one nurse and a part-time technician, using one car for travel, the *modus operandi* of the clinic, unchanged from that originally in effect, being as follows:

1. The traveling chest clinic is operated as a consultation service to the physicians of Alabama to aid in the diagnosis of pulmonary tuberculosis.
2. The clinic is held upon invitation of the County Medical Society acting through its Secretary or the County Health Officer.
3. Until further plans are formulated the clinic will examine patients from Tuesday morning to Friday noon as usual.
4. Admission to the clinic is granted to those referred by their physician as suspected of having pulmonary tuberculosis and to contacts of known cases.
5. In order to examine the maximum number of cases the tuberculin testing of contacts should be done by the County Health Officer prior to the clinic's visit. If this is done and the County Nurse obtains the family roster it will be possible to examine 55 to 60 cases at each clinic.
6. Although it may seem desirable to re-examine already diagnosed cases the lack of facilities and respect of the original purpose of the clinic will prohibit such a practice with few exceptions.
7. The result of the examination will be sent in writing to the referring physician about ten days following the close of the clinic. *Under no circumstances will the patient be informed of his or her diagnosis by anyone other than the referring physician.*
8. It is desirable to arrange for the County Medical Society to meet sometime during the clinic so that general tuberculosis problems may be discussed. In keeping with the consultation idea it is well to have the physician accompany a group of his cases to the clinic when possible.
9. Paper x-ray film has been approved by the committee appointed to investigate its use in public health programs. Except for questionable cases these films will be used. The physician may borrow the film of any of his cases at any time.

The following table shows the actual cost to the State of the service during the period of time indicated.

Fiscal Year 1930-31

Salaries	Travel	Supplies	Miscel.	Total
\$18,146.00	\$4,733.72	\$8,571.16	\$422.34	\$31,872.50

Fiscal Year 1931-32

\$16,258.68	\$4,659.39	\$2,080.78	\$336.85	\$23,335.70
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Fiscal Year 1932-33—October-April (7 months)

\$6,149.94	\$1,404.61	\$1,302.57	\$191.37	\$9,048.49
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Fiscal Year 1933-34—October-March (6 months)

\$2,370.00	\$847.72	\$260.21	\$47.40	\$3,525.33
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Attention should be directed to the excessive cost of supplies in the first year which included the cost of x-ray equipment, charts, luggage, etc. Attention is also called to the extremely low figure for the six months of the current fiscal year due in

part to the use of paper x-ray films and, of course, to the fact that only one clinic is in operation. Despite the limited funds for the operation of the clinic, an average of 50 or more cases are examined each week.

Although a bill was passed by the 1931 legislature to encourage and subsidize county tuberculosis sanatoria, no funds whatsoever were appropriated for this purpose. There are less than 200 beds occupied at present in the four counties operating local sanatoria. The two newly constructed sanatoria, at Decatur and Scottsboro, are not yet equipped. With 8,000 diagnosed cases of pulmonary tuberculosis on record, there is urgent need for additional facilities to be provided for their care.

At the present rate, exclusive of the tuberculosis beds at the Wetumpka State Prison and at the Bryce Hospital for the Insane, at Tuscaloosa, Alabama is spending \$7,050.66 of State funds annually for tuberculosis control work.

Mississippi reports that the total amount of State funds expended in 1933 for tuberculosis work was \$170,000.00. The State supports 480 tuberculosis beds and 50 preventorium beds. Five State clinics were operated during the year.

Georgia appropriated \$245,000.00 in 1933 for the support of 335 beds for the tuberculous. In addition to the hospital facilities, there is a State supported traveling chest clinic composed of one chest clinician, one organizing clinician, two nurses and an x-ray technician. Recently the operation of this clinic has been changed from that of a county plan to a district set-up. By using paper x-ray films and dispensing with a large percentage of the physical examinations, the chest clinician figures on handling 15,000 cases annually for diagnosis which will mean two clinics a year in each district with 750 cases x-rayed at each clinic. In 1933 \$20,519.35 was spent for clinic work. The enlarged service is expected to cost very little additional although three times the number of cases will be handled.

Tennessee, in 1933, spent \$43,079.00 for tuberculosis work. There are no State supported tuberculosis beds. For the first six months of 1933 there were three State maintained traveling chest clinics while the last six months saw only one such clinic in operation.

North Carolina, in 1933, spent \$160,-030.00 of State funds for tuberculosis. Since the law requires that a minimum of 50c per day be paid by each patient or the county, there was a considerable supplementary amount added to the above figure to support the 450 State sanatorium beds. There are three traveling chest clinics in operation in addition to daily clinics conducted at the sanatorium. The counties must provide the nurses and the x-ray films for the three traveling clinics.

Virginia spent \$386,495.00 of State funds in 1933 for tuberculosis work, this State maintaining 816 free tuberculosis beds. The clinic service has a director, an assistant director, two clinicians, twelve field nurses, one x-ray technician, a traveling x-ray outfit, two clinic clerks, two office secretaries and a file clerk.

Pennsylvania for 1933 spent \$1,107,-707.00 of State funds for tuberculosis work. There are 2,000 State supported beds for the tuberculous and an additional 500 State supported preventorium beds. The State operates 91 clinics.

New York, as far back as 1904, decided that the problem of the State assuming complete responsibility of the tuberculosis program was too difficult with a central set-up. They did decide to have a State institution at Raybrook with 300 beds for which \$448,957.33 of State funds was provided in 1933. In the meantime, State laws were passed requiring counties of 35,-000 or more population to construct public tuberculosis sanatoria. These have a capacity of 4,341. The tuberculosis division of the State Health Department receives \$67,306.00 of State funds. The total expenditure of State funds is therefore \$516,-263.33 for 1933. Attention is called to the last year's appropriation of \$3,000,000.00 of State funds for new district sanatoria. (The director points out that legally required county sanatoria spent \$3,457,558.00 in 1933.)

Illinois spends no State funds for tuberculosis work directly but has provided legislation for counties or municipalities to use tax funds for operating tuberculosis sanatoria or for the support of patients in other sanatoria.

Michigan spent \$1,341,783.00 of State funds for tuberculosis work in 1933; of

this amount \$273,000.00 was for the State sanatorium, \$100,000.00 for the tuberculosis division of the University Hospital and \$967,778.00 for subsidy to county sanatoria for indigent patients at the rate of \$1.00 per day per patient. No mention is made of the actual number of beds so provided.

Kansas spent \$116,383.81 of State funds for tuberculosis work in 1933. There are 267 State supported tuberculosis beds. There are no State supported clinics.

Minnesota in 1933 spent \$454,670.00 of State funds for tuberculosis work. The state tuberculosis sanatorium provides 390 beds and State funds subsidize 1,857 beds in county sanatoria. Instead of operating clinics, Minnesota conducts an intensive epidemiologic tuberculosis survey service.

To summarize the 1933 expenditures of State funds for tuberculosis work in other states as compared to Alabama's 1934 annual rate, attention is directed to the table below. (These figures do not include county, city, or seal sale expenditures.)

Alabama—1934 rate.....	\$ 7,050.66
Georgia	265,519.35
Tennessee	43,079.00
Mississippi	170,000.00
North Carolina	160,030.00
Virginia	386,495.00
Pennsylvania	1,107,707.00
New York	517,263.00
Minnesota	454,670.00
Michigan	1,341,378.00
Kansas	116,383.81

It is thus seen that other Southern States with similar tuberculosis problems are spending a great deal more than Alabama. Criticism may be made that some of these states have neglected general public health programs at the expense of tuberculosis. Nevertheless the State of Alabama is sadly neglecting its tuberculosis problem. There should be found some workable medium that will at least partially solve the problem, even in these depressed times.

An indefinite period of isolation of untreatable or incurable cases in highly specialized sanatoria is extremely costly. Isolation of such cases in the home with a small State subsidy might prove practical. Consideration of treatable cases for collapse measures requires institutional care at least for a period of weeks. To build adequate sanatorium space accessible to every

community of the State is at present too big a hurdle to jump. On the other hand, with general hospitals, many of which are in strained financial circumstances, already having necessary equipment, it should be possible, through local or State subsidy, to make a large number of beds available on short notice, at least for the surgical handling of suitable cases of pulmonary tuberculosis.

It is easy to say that one shall follow the example of Illinois and shift the burden of tuberculosis control to the individual communities; but, in a rural State such as Alabama with county finances at their present low ebb, it is quite impossible for the problem to be adequately handled by local finances alone.

For the present it is felt that a diagnostic service operated at a cost to the State of approximately \$3.00 per patient examination, which includes an x-ray film on each case, should receive the full cooperation of the medical profession, if the clinics are limited to referred cases and the subsequent handling of the cases left in charge of the physician. It should be stressed, however, that there is a crying need that further provision be made for handling manifest cases of tuberculosis. In certain states, particularly Georgia, Michigan and Virginia, the use of state institutions for training the general practitioner in better chest diagnosis and the care of the tuberculous promises to greatly improve the outlook for proper control of the disease.

DEPARTMENT OF PUBLIC HEALTH

BUREAU OF ADMINISTRATION

J. N. Baker, M. D.
State Health Officer in Charge

BLUE RIBBON PROGRAM

Contributed By
B. F. Austin, M. D., Field Adviser

The Blue Ribbon Program has been designed for the purpose of stimulating the intelligent interest of parents, teachers and children in the physical, mental, social and moral health of the school child. The State Health Department is recommending the program for use in elementary schools in counties where full-time health units are maintained.

Any school child can qualify to receive a blue ribbon and it is awarded as a recognition of merit. To become eligible, however, he must show evidence first that he is making satisfactory progress in his studies. The teacher is the judge and must certify to this requirement. A passing grade would ordinarily be acceptable. Should illness or some other unavoidable cause render a child unable to make a passing grade, however, he should not be disqualified for a blue ribbon. Secondly, it must be shown that he is amenable to the ordinary requirements of school discipline. This require-

ment is included for two reasons: (1) no one wishes to give an award of merit to an incorrigible child even though he may qualify on all other counts; and (2) it is felt that the requirements of school discipline are in a way a test to the child's potential ability to adjust himself to the demands of society. This does not mean to eliminate the normally mischievous or even the extraordinarily mischievous child. Rather, it is to eliminate the child who has vicious and anti-social tendencies.

In the third place he must show evidence that he is reasonably cooperative in the practice of health habits. This requirement is made to direct the attention of the child to the importance of observing health habits continuously. He must keep the daily record for one month. There may be certain conditions, over which the child has no control, that would prevent him from making one hundred per cent on his record. Some children may find it impossible to have the required amount of milk each day. The teacher will determine whether or not he has done his best to observe the rules. Fourthly, it must be shown that he is free of remediable physical defects. Freedom from remediable defects is determined upon physical examination. This does not mean that the child must be physically perfect, but rather that the maximum correc-

tion or treatment shall have been attained. A child would not be ineligible if he had a defect, which, on basis of a physician's certificate, can not be remedied further. Finally, he must have been immunized against typhoid fever, diphtheria and smallpox. To qualify for this requirement the child must have, for diphtheria, a certificate showing completed toxin-antitoxin or toxoid inoculations, or a certificate of negative Schick test. For typhoid fever, he must present a certificate showing that he has received three successive injections of typhoid vaccine within three years, or a certificate setting forth that he has had typhoid fever. For smallpox, a vaccination scar must be in evidence, or he must present a certificate of reaction of immunity, or a certificate stating he has had smallpox.

The objective of the program is the development of a balanced, healthy personality, with the child himself as its center. His positive and continued cooperation must be secured through the sympathetic interest of teacher and parents. The health program of the child should function twenty-four hours a day throughout the year and the Blue Ribbon Program serves as a reminder that health is a normal quality of living rather than a formal subject to be taught. Every care should be exerted to make the practice of health habits, the correction of defects and the immunization against typhoid fever, diphtheria and smallpox means of teaching the child the fundamental importance of such procedures. He should realize that securing a blue ribbon is not the accomplishment, but rather only a step in progressive and increasing understanding of and performance in practical health measures.

To accomplish the results for which the Blue Ribbon Program was designed the active support of school authorities, health workers, parents, children, physicians and dentists must be obtained. Wholehearted cooperation must be acquired from lunch room directors, home economics teachers, athletic directors, nutrition specialists and janitors; from civic clubs, parent-teacher associations, the American Legion, and auxiliary groups, and all other local organizations and individuals interested in the health and welfare of children.

BUREAU OF PREVENTABLE DISEASES

D. G. Gill, M. D., Director

STANDARDIZED TREATMENT PROCEDURE IN EARLY SYPHILIS

There appeared in the April 21st number of the Journal of The American Medical Association and in the April number of Venereal Disease Information issued by the United States Public Health Service an article by a group of the leading syphilologists of this country which is of intense importance to every physician treating syphilis.

This group—Stokes, Cole, Moore, O'Leary, Wile, Parran, Vonderlehr, and Usilton, have collected and analyzed the records of 75,000 cases of syphilis of which 3,244 were examples of early syphilis followed six months or more and 383 followed for as long a period as five years or more. The time covered ranged from 1916 to 1931 for the collection of the cases and twenty months to the study of the records, so that the conclusions reached may be accepted as applicable to the work of today.

To quote from this article: "The term applied by Pusey to the superior outlook of treatment begun in the primary stage of syphilis before the blood serologic tests become positive (seronegative primary) has been justified abundantly by statistical analysis. The proportion of 'cures' when treatment is begun in the seronegative primary stage (diagnosis by dark field or other identification of the *Spirochaeta pallida*) is given above 71.4 percent average, and 83 to 86 percent best results. When, through failure of the patient to present himself or his physician to diagnose primary syphilis until the blood test becomes positive, treatment is not begun until the so-called seropositive primary stage, 'cure' is attained in only 53.3 percent by average and 64 to 70 percent by the best methods. This represents a clear loss of 18 percent in outlook for 'cure' by the delay. If the patient goes on to the development of a secondary eruption, of course with a positive blood test, cure is attained in only 50 percent by average and 61 to 82 percent by best methods. This represents a possible loss of 21 percent by average and 14 percent by best methods, over the outlook prevailing

when treatment is begun in the seronegative primary stage."

Quoting further: "One of the most important contributions of recent years to the technic of treatment of early syphilis has been to the question of intermittency as distinguished from continuity of treatment. Those who recall the nineteenth century syphilology will remember the practical necessity of rest periods from treatment, enforced by the high toxicity and debilitating effects of the one effective antisyphilitic drug, mercury. With the advent of rapidly eliminated tonic agents like the arsenicals, which leave no trail of anemia and weight loss in their wake, and of highly effective and sometimes markedly stored but relatively nontoxic agents such as bismuth, much that appears as intermittent is really continuous treatment. While other investigations, including especially the foremost American study by Moore and Kemp, have supported the view that even the most modern treatment should be continuous and not intermittent, the cooperative clinic group investigation seems to set the capstone to the demonstration. It may now be said with positiveness, that the old practice of administering treatment in early syphilis by fits and starts, conditioned on the Wassermann report of the blood, is pernicious; that even the introduction of a few weeks of complete rest from treatment into the management of the first 18 months of the disease is likely to be profoundly injurious; that the patient who lapses or escapes treatment during this period is his own worst enemy; and that *no rest intervals* and a regime in which the patient is *constantly receiving either an arsenical or a heavy metal during the first year* of the disease or longer, if the indication require, is the best and safest modern practice both in the interest of the patient and of the public health.

"The figures supporting these rather forcible and uncompromising statements are clear cut. They were obtained both by a study of infectious relapse and by the analysis of serologic and clinical results on the basis of four modes of treatment: the continuous, just described; the intermittent, in which rest intervals or complete breaks in treatment were introduced into the normal course, either purposefully or through the

patient's negligence; the intensive, a system that has had some popularity in this country, and involves a short (3 or 4 injections) course of arsphenamine alternating with a heavy metal course in units with rest intervals between the arsenic-heavy metal units; and finally, irregular treatment, totally irregular and uncontrolled, with long and short courses, rest intervals and so forth in fortuitous disarrangement.

"Continuous treatment, then, whether prolonged or brief, and practically regardless of the drugs used, is superior in its results to the intermittent or other schemes of treatment. The continuous method secured the reversal of the blood Wassermann reaction by the end of a year in 81.8 per cent, whereas the intermittent scheme of treatment with rest intervals of a month or more secured only 37.3 percent of reversals, and irregular treatment gave only 4.7 percent of Wassermann reversals within a year. It appears then, that that great bugbear of physician and patient, the fixed or irreversible positive Wassermann reaction in treated early syphilis, lies at the door of the rest interval or lapse from treatment rather than in any peculiarity of disease or drugs.

"In the matter of relapse, treatment continuously administered resulted in fewer relapses of all kinds than treatment with rest periods or lapses (continuous treatment 13.1 percent relapse and Wassermann fastness, as against 20.8 percent with intermittent, 45.3 percent with irregular, and 41.5 percent with intensive treatment).

"End results after 2 years show even more clearly the dangers of the rest period and irregularity of treatment as well as the inadequacy of the short arsphenamine course in the intensive system. With continuous treatment 79.7 percent achieved satisfactory or 'curative' results, with intermittent treatment (rest intervals) 65 percent, with irregular treatment 33.3 percent, and with intensive treatment 23.4 percent.

"It has become inexcusable either to shorten treatment because the patient was seen early in the course of the infection (Wassermann negative or seronegative primary syphilis), or because his blood test, originally positive, is reversed to negative within the first year. The former concep-

tion, that of so-called 'abortive cure', has been abandoned even in the country of its origin (Germany). The latter conception, much more widely prevalent in this country, also should be abandoned. The Wassermann findings are an unsafe guide to the time of cessation of treatment. That the patient tends to stop with the first negative is the well-known 'fiscal landmark' of Harrison, and it is an open question whether, for his own good, the patient should be informed of a negative blood test even if he obtains one, lest he thereupon shorten his course of treatment. *Treat by schedule and not by Wassermann test* is the slogan of the best modern practice.

Finally, the group asks, "Is it possible to define an average amount of treatment that leads to good results? On the much to be desired answer to this question, the co-operative studies shed a certain amount of light, complicated by the statistical complexities introduced by lapse of patients, lack of adequate follow-up, and similar influences that effect the entire field of modern syphilology. It appears that after two years of observation or treatment the largest number of patients obtaining satisfactory results falls in the category of those receiving from 20 to 29 injections of an arsphenamine and a similar amount of heavy metal. Thus 30 injections of the arsenical becomes a therapeutic objective, in place of the '40 or over' suggested by the results of earlier investigators. That heavy metal is a necessary participant in the securing of good results is indicated by the fact that progression and relapse occurred when much arsphenamine and little heavy metal was given in 25.9 percent as compared with 16.5 percent of the patients who received much arsphenamine and much heavy metal (over 20 injections or 120 injections)."

"From the data thus far presented it appears, then, that the modern system for the treatment of early syphilis must be continuous; it must employ an arsphenamine and bismuth, the latter intramuscularly; it must call for not less than 20, and unless special resistiveness is encountered, hardly more than 30 injections of the arsphenamine; and in accordance with the principles generally recognized in the treatment of the disease, the system should call for

continued treatment with heavy metal for one year after all symptoms and signs of the disease have disappeared."

"In general, if neoarsphenamine is substituted for arsphenamine, '606', a longer arsenical course and somewhat shortened intervals, with a dosage scale of 0.45 gm.-0.6 gm. maximum for women, and 0.6 gm.-0.75 gm. for men is advised."

The conclusions reached by this group mark an important landmark in the history of syphilis and its treatment.

BUREAU OF LABORATORIES

James G. McAlpine, Ph. D., Director

THICK FILMS FOR THE DIAGNOSIS OF MALARIA

In the State of Alabama, proper diagnosis of malaria is a most important problem. For a number of years the U. S. Public Health Service has been attempting to standardize throughout the country the technique used in all laboratories. At present, it is recommending a thick film preparation which has the following advantages: 1. By concentrating in a small area a relatively large amount of blood, the number of positives is increased by 50 per cent; 2. The making of these films is simpler than the preparation of the old thin blood smear.

Through the courtesy of the Service one of its microscopists visited Alabama in December and demonstrated this new method to all County Health Officers and laboratory personnel. At that time it was emphasized that greater accuracy in diagnosis would ensue if the thick blood films were used. Since that time the laboratory has changed the outfits and directions for taking malaria slides, and advises that the thick film be employed whenever possible. So far, very few of these thick films have been received for routine diagnosis and emphasis is again placed on the importance of this changed technique.

There is given below a copy of the directions for taking thick films.

THICK FILM TECHNIQUE

1. Clean slides are of utmost importance since the blood film will slip off an oily or dirty slide. Therefore, in handling do not touch the surface of the slides with the finger.
2. Wash the finger or ear with alcohol to remove skin secretions, and dry. Drying is important because even a trace of alcohol on the finger will fix the blood film and this must not be done.

3. Prick the finger deeply enough to allow blood to well up on gentle pressure. Obtain two to four drops of blood (depending upon size of drops) near one end of the slide. With the corner of the other clean slide draw a circle with the blood to about the size of a dime and fill in the center with the excess blood. Defibrination is not necessary. Do not have the blood too thick. If more blood than necessary is placed on the slide it is better to make the puddle larger than to have the blood so thick in one spot that it will crack and chip off when dried. Do not touch the skin with the slide while taking the blood, as artefacts, which may be confusing in diagnosis, can be obtained in this way.
4. Allow the blood to dry in the air, being careful to lay the slide flat (so that the blood will be evenly distributed), and to have it well protected from flies and dust.
5. If a differential count or any other clinical diagnostic procedures are desired, the second slide may be used to make a thin film. Allow this to dry in the air. Place the cardboard between the slides, leaving the film sides turned in and being careful that the cardboard does not touch the blood. Fasten together with a rubber band and put in slide box. The request slip may be fastened around the outside of the box. Do not let more than three days elapse before the slides are received in the laboratory.

Attention is particularly called to section 5 in the above directions. Since the staining technique employed for thick smears washes out the greater part of the blood constituents, it is impossible to make a differential count or to diagnose anemia. When such information is desired, it is advisable to send both thick and thin films.

BUREAU OF VITAL STATISTICS

W. T. Fales, D. Sc. Director

TWO EXTREMES

Every baby born in Alabama is entitled to registration. The Bureau of Vital Statistics has repeatedly made this statement. In 1933 there were 4,700 less births registered than during the previous year. In a recent communication to the State Health Officer, the Chief Statistician for Vital Statistics of the United States Bureau of the Census made an inquiry as to whether or not this decrease was actual. Fortunately, it was possible, at the beginning of this year, to make birth registration surveys in several counties. While the results of these surveys have not been completed in all instances, tabulation of the results in two counties, Jefferson and Chambers, in-

dicates clearly that there is wide variation in the completeness of birth registration in different counties.

In Jefferson County a survey of births occurring in 1933 indicated that the registration was 97.5 per cent complete. In Chambers County, on the other hand, a similar survey indicated that registration was only 64 per cent complete. There are several other counties in Alabama in which the registration is probably as deficient as in Chambers County. Sixty-two and three-tenths per cent of the births in Alabama are attended by physicians. If every doctor who delivers a baby would report the birth promptly, i. e., within the ten days provided by law, there is no question but that our registration would be materially improved. The Bureau of Vital Statistics has considerable evidence to indicate that births attended by midwives in many areas are more often reported than those attended by physicians. There is no question but that parents, when they employ medical attendance at birth, assume as a matter of course that the physician will make the necessary report of the birth promptly, as required by law. The fathers and mothers of Alabama have come to appreciate that a public record of a birth is important to their child. Nothing disturbs their confidence in the medical profession more than to discover at a later date that the physician has neglected to make such a report.

With the establishment of the present system of collection of vital statistics, particularly the establishment of a system of local registrars for each precinct of the State, there was an immediate increase of more than 15,000 in the number of births reported annually. Since that time there has been a further increase of some 5,000 births a year. Our registrars frequently report the indifference of physicians in co-operating with them in making these reports. The Bureau of Vital Statistics has tried, during the past ten years, to seek the voluntary cooperation of the physicians in improving our registration. There are some physicians in the State who do not, even now, appreciate the importance of birth and death records and, because of their indifference or procrastination, frequently fail to report a birth. Has not the time arrived when every doctor in the State should report promptly and without undue

prodding the births which he attends? The Bureau of Vital Statistics believes that mothers and fathers expect this service of their physician and the Health Department, in turn, earnestly asks this cooperation on the part of the medical profession.

BUREAU OF SANITATION

G. H. Hazlehurst, Director

MIDGE FLY LARVAE IN WATER SUPPLIES

Larvae of the midges or chironomidae are known to develop in all types of water. They have been found in springs, ponds, lakes, stagnant pools and shallow wells. Experiments at the local stream pollution station of the U. S. Public Health Service have demonstrated that the chironomidae will deposit eggs on the surface of clean tap water in a bucket and that the larvae will develop in the absence of visible sediment or food supply.

The latter fact indicates the reason for these larvae having been found in home supplies, springs and shallow wells in Alabama which, apparently to the naked eye, were free from any food supply. The fact, that the midge not only deposits her eggs on water weeds and floating scum but also on the clean surface of water, indicates too why the larvae are found in coverless reservoirs of sparkling clean water. Fortunately laboratory experimentation has indicated that these worms, originating from the midge fly, do not work their way through properly designed sand filters. In filtered water adequately protected from the egg laying insect, therefore, there is probably no danger of the larvae entering the supply.

In describing a larval contamination of a clear water reservoir of the city supply at Cincinnati in 1931, Bahlman (Journal of the American Water Works Association, May 1932) discusses the life cycle of the *Chironomus* briefly as follows:

"From textbooks we read that the midges or chironomidae deposit their eggs on water weeds, floating scum, or on the clean surface of water. A generation is completed within about five weeks. The larvae are bright red worms, commonly called blood worms, and are about one half to one inch in length. They swim about with an

active undulating motion. They develop in all types of water, in springs, and in stagnant pools, in shallow rills, and in the deepest lake bottoms at great pressures. The high oxygen carrying capacity of the hemoglobin of the blood plasma makes life possible where little oxygen is present. Under favorable conditions these worms develop in enormous numbers, and are the source of abundant food supply for fish. Developing from the egg in the bottom ooze, the larvae proceeds to burrow through the muck, fashioning tubular shelters for themselves out of silt or any material that is available. The wall of the tube is held together by the silk-like secretion of the salivary glands. These shelter-tubes are open at both ends, with a net-like silken barrier at one opening. By vigorous undulations, the larvae draws a current of water into the tube and feeds upon plankton organisms which become enmeshed in the silken net. It may also reach out from the tube and feed upon disintegrated plant tissues. These shelter-tubes and burrows will ramify into every available crevice, and often large numbers of the worms thus escape casual observation. The final stage of the metamorphosis, the fly, is similar in size and appearance to the common mosquito, from which it might not be distinguished by the layman."

It has not been found practical to control, by the use of chemicals, a water supply, whether it be large or small, against the midge larvae. Attempts to kill these worms with high doses of chlorine and copper sulphate, except with prohibitive doses, have been unsuccessful.

A number of these larvae which have been collected from shallow wells or springs by members of the Bureau of Sanitation or which have been sent to the Bureau by owners of such supplies have been examined and identified. In each case the owner or parties concerned have been advised that the practical method of control is the same as that for securing a safe water supply. Information on the latter is given in a "Bulletin on Private Wells and Springs" published by the Alabama State Department of Public Health. In the case of open clear water reservoirs or storage tanks the solution is a tight cover to prevent the ingress of the insect.

T. H. M.

CURRENT STATISTICS

*PREVALENCE OF COMMUNICABLE DISEASES IN ALABAMA

	March	April	Estimated Expectancy April
Typhoid	8	19	33
Typhus	19	7	2
Malaria	61	125	85
Smallpox	5	2	56
Measles	3867	3284	691
Scarlet fever	47	28	62
Whooping cough	339	388	177
Diphtheria	104	58	53
Influenza	596	200	986
Mumps	199	159	167
Poliomyelitis	2	0	2
Encephalitis	4	5	2
Chickenpox	274	196	210
Tetanus	5	1	4
Tuberculosis	248	260	361
Pellagra	31	36	60
Meningitis	4	4	9
Pneumonia	685	389	499
Syphilis (private cases)	315	241	148
Chancroid (private cases)	7	12	7
Gonorrhea (private cases)	249	179	152
Ophthalmia neonatorum	2	1	2
Trachoma	0	0	0
Tularemia	4	3	0
Undulant fever	2	0	0
Dengue	0	0	0
Amebic dysentery	2	2	0
Rabies—human cases	0	0	0
Positive animal heads	107	100	

*As reported by physicians and including deaths not reported as cases.

The Estimated Expectancy represents the median incidence of the past nine years.

PROVISIONAL MORTALITY STATISTICS

ALABAMA, MARCH 1934

CAUSES	Number of Deaths Registered March 1934			Annual Rate per 100,000 Population		
	White	Colored	Total	March 1934	March 1933	March 1932
ALL CAUSES	1527	1239	2766	1175.8	943.5	1158.5
Typhoid fever	1	1	2	0.8	0.4	3.0
Typhus fever	1		1	0.4	0.9	
Smallpox						
Measles	44	5	49	20.8	0.9	0.4
Scarlet fever	1		1	0.4		2.2
Whooping cough	26	11	37	15.7	9.0	5.2
Diphtheria	9	2	11	4.7	1.7	3.9
Influenza	72	61	133	56.5	54.1	56.6
Pneumonia, all forms	175	151	326	138.6	85.9	120.6
Poliomyelitis	1		1	0.4	0.9	
Tetanus		2	2	0.9	0.9	1.3
Tuberculosis, all forms	64	96	160	68.0	72.6	77.5
Tuberculosis, pulmonary	59	93	152	64.6	65.3	70.5
Malaria	6	3	9	3.8		3.5
Cancer, all forms	88	41	129	54.8	55.8	55.3
Diabetes mellitus	24	7	31	13.2	7.7	10.0
Pellagra	17	11	28	11.9	9.9	10.0
Cerebral hemorrhage, apoplexy	97	55	152	64.6	54.6	62.7
Diseases of heart	230	139	369	156.8	134.9	128.4
Diarrhea and enteritis, Under 2 years	9	5	14	5.9	4.3	5.2
2 years and over	10	4	14	5.9	2.6	6.5
Nephritis	121	96	217	92.2	76.9	77.9
Puerperal state, total	20	5	25	10.6	12.9	19.6
Puerperal septicemia	5	1	6	2.5	3.4	4.8
Congenital malformations	18	8	26	11.0	7.7	8.3
Congenital debility and other diseases of early infancy	74	45	119	50.6	44.2	51.4
Senility	20	30	50	21.2	12.9	17.8
Suicides	17	3	20	8.5	7.7	10.4
Homicides	18	41	59	25.1	19.8	14.4
Accidental burns	17	24	41	17.4	9.9	9.1
Accidental drownings	1	1	2	0.8	3.0	
Accidental traumatism by firearms	6	2	8	3.4	3.4	0.9
Mine accidents					0.9	0.9
Railroad accidents	6	6	12	5.1	4.7	5.2
Automobile accidents	18	10	28	11.9	7.3	12.6
Other external causes	34	18	52	22.1	12.9	111.5
Other specified causes	198	164	362	153.9	121.1	148.0
Ill-defined and unknown causes	84	192	276	117.3	101.0	115.8

Medical News

(Secretaries of county medical societies and other physicians will confer a favor by sending for this section of the Journal items of news relating to society activities.)

DR. C. A. THIGPEN HONORED

Dr. C. A. Thigpen of Montgomery was recently awarded the degree of Doctor of Laws by the University of Alabama, a signal distinction, and one richly deserved. For many years Dr. Thigpen has been outstanding in the field of ophthalmology and otolaryngology, and is nationally renowned for exceptional surgical skill displayed in his chosen specialty.

Not only has Dr. Thigpen reached the pinnacle of success in his professional work, but in his private life he exemplifies all of the qualities of a high-minded citizen and progressive humanitarian.

Not always are such honors bestowed solely because of merit and outstanding achievement as has been done in this instance. The host of friends of Dr. Thigpen, both within and without the profession, rejoice that the University of Alabama has seen fit to thus honor itself by giving recognition to one of Alabama's sons who so richly merits it.

Book Abstracts and Reviews

New and Nonofficial Remedies, 1934, containing descriptions of the articles which stood accepted by the Council on Pharmacy and Chemistry of the American Medical Association on Jan. 1, 1934. Cloth. Price, postpaid, \$1.50. Pp. 510; lx. Chicago: American Medical Association.

New and Nonofficial Remedies, 1934, has the same pleasing format and helpful mechanism that has characterized it in past years. The enrichment of the indexing started a few years ago is continued and its value even increased by some desirable simplification of cross references.

The Council has made the usual careful revision of the book. The general article Lactic Acid-Producing Organisms and Preparations has been practically rewritten. The chapter on Arsenic preparations has undergone some revision, especially in the statement concerning Neoarsphenamine. The descriptions of Chiniofon and Vioform have been revised in the light of recent developments in the treatment of amebiasis. The article on Ethylhydrocupreine has been revised to delete references to Optochin Base, which has been omitted; Optochin Hydrochloride has been retained, being recommended only for external use. The description of Typhoid Vaccine has been revised to give the dosage of the combination of typhoid and paratyphoid organisms and to mention the use of typhoid vac-

cine in nonspecific protein therapy. A number of revisions of the Council's Rules have been made, particularly with reference to the name of products, which is one of the most frequent and troublesome of the problems with which the Council has to deal. Comparison with last year's volume will show that revisions of more or less importance occur in many other chapters.

Among the preparations newly included in this volume are: Aminophylline, a double salt or mixture of theophylline and ethylenediamine, with the advantage of greater solubility over other theophylline preparations; the new alum precipitated diphtheria toxoid; Neo-Iopax, a new medium for intravenous urography; Benzedrine, an ephedrine substitute; serums containing type II pneumococcus antibodies, which the Council has recently recognized as worthy of clinical trial in view of improved preparations and technic; Autolyzed Liver Concentrate and Extralin, two new liver preparations for use in the treatment of pernicious anemia; Metycaine, a new local anesthetic; and Sodium Morrhuate, a salt of the fatty acids of cod liver oil, proposed for use as a sclerosing agent.

Annual Reprint of the Reports of the Council on Pharmacy and Chemistry of the American Medical Association for 1933. Cloth. Price, postpaid, \$1.00. Pp. 188. Chicago: American Medical Association.

The main bulk of the volume, which is, incidentally, considerably increased over that of recent annual volumes, is taken up with reports on products which the Council has found unacceptable for inclusion in New and Nonofficial Remedies. Of special note are: The report on Alpha-Lobelin, a drug upon which the Council in 1927 issued a preliminary report but which is now found not to have established itself as a respiratory stimulant of as great usefulness as carbon dioxide and oxygen; the report on a number of preparations marketed by the Upjohn Company with unwarranted, misleading and unscientific claims; the report on Clavipurin, a preparation of the alkaloids of ergot, marketed without adequate declaration of the composition and without adequate standardization under a nondescriptive proprietary name with unwarranted therapeutic claims; the report on Diamypsal, another pyridine derivative proposed for use in bacterial infections, convincing evidence for the therapeutic value of which is lacking; the report on Euphydigital, an irrational mixture of digitalis and a theophylline preparation marketed under an uninforming, proprietary name, with exaggerated and unwarranted claims for its therapeutic value; the report on Guphen, stated to be the guaiacol ester of phenylcinchoninic acid, marketed with unwarranted therapeutic claims under an uninforming, proprietary name and having no proved advantage over its constituents administered separately; the report on Niazo, a pyridine compound of unsubstantiated value as a urinary antiseptic; the report on Omnadin, a preparation recognized for use for nonspecific lipoprotein therapy practically as a cure-all; and the report on a group of endocrine preparations of the Rovin Laboratories variously unacceptable as being of indefinite composition and of undemonstrated therapeutic value.

A feature of marketed current interest in this volume is the preliminary report on Alpha-Dinitrophenol, the new drug for acceleration of cellular metabolism. The Council voices a warning on the dangers attending the use of this drug; this warning has been increasingly justified in reports of fatalities since the appearance of the Council's report in July of last year. Other preliminary reports which make this volume one of the most interesting issued by the Council in recent years are those on Dilaudid, a new narcotic drug related to morphine; Fuadin, a new antimony compound for use in the treatment of bilharziasis and granuloma inguinale; and Hippuran, a new product for intravenous and oral urography. The comprehensive and definitive special report on estrogenic substances furnishes a much needed review of the present status of such products in gynecologic therapy. The Council insists upon the doctrine that basic laboratory investigation of these substances should precede clinical use. Of interest to hospital authorities, especially in connection with the book *Hospital Practice for Internes* recently issued by the Council in collaboration with the Council on Medical Education and Hospitals, is the special report, *The Hospital Formulary*, by Hatcher and Stainsby of New York. It outlines a plan characterized by the highest regard for the principles of rational drug therapy. Of more general interest is the Council's second report on the intravenous use of barbitol compounds which is the result of a questionnaire sent to representative physicians. In view of the answers to the questionnaire, the Council reaffirmed its previous decision concerning the limitations of intravenous use of barbitol compounds; namely, that these preparations should be administered intravenously only in a limited number of conditions in which administration by other routes is not feasible. The report carefully details these conditions. The lengthy report on the omission of Pyridium is an outstanding example of the meticulous fairness characteristic of the Council's treatment of the manufacturers of commercial preparations. In connection with the omission of Pyridium should be noted the report which declares Azophene (Mallophone) not acceptable. This product has been shown to be identical with Pyridium and the Council considers the claims for its usefulness as a local, general, or urinary antiseptic as unwarranted, as are those for Pyridium.

Truth About Medicines

PROPAGANDA FOR REFORM

Ironized Yeast.—The Bureau of Investigation of the American Medical Association reports that the public has been made what the advertising men would call "yeast-conscious" by the extensive and intensive advertising of the Fleischmann product. The facts are, of course, that as a medicine yeast has no important place except as a means of furnishing vitamin B, which ordinarily

should be and would better be obtained from one's food. But the public is not aware of these facts, so that it is not surprising that, by plausible advertising, a "patent medicine" called Ironized Yeast has been built up into one of the best sellers in the nostrum field. Ironized Yeast advertising is typical of the times. In the newspaper advertising of Ironized Yeast, skinny versus well-developed men and angular versus well-curved women are brought into juxtaposition with the object of showing how necessary a rounded figure—and therefore Ironized Yeast—is to achieve economic or social success or marital happiness. Ironized Yeast comes in a bottle of fifty tablets costing \$1—that is, the tablets cost 2 cents apiece. The public is urged to take from eight to twelve tablets a day for from two to three months; thus, at twelve tablets daily, the cost for three months would be \$21.60. According to the Ironized Yeast advertising, the product is "made from specially cultured *brewers' ale yeast* imported from Europe"—claimed in earlier advertising to be from Bass' Ale brewery—which, it is alleged, "by a new process is concentrated 7 times." Further, this yeast "is then *ironized* with 3 kinds of strengthening iron." From the various analyses which have been made of Ironized Yeast, including that of the A. M. A. Chemical Laboratory, it appears that Ironized Yeast is essentially yeast with small amounts of iron and phenolphthalein. The concern which sells it has attempted to obtain testimonials from physicians by offering them a bottle of perfume and testimonials from the general public by the promise of a picture. The Ironized Yeast advertising carries the impression that by taking the preparation undernourished and angular women can in a few weeks' time (usually three) be transformed into examples of rounded buxomness while skinny men, by the same method, can undergo a similar transformation. (Jour. A. M. A., May 19, 1934, p. 1697.)

Dinitrophenol Poisoning.—Two more cases of sudden death from poisoning with dinitrophenol have been reported in The Journal, April 7, 1934, p. 1141; *ibid*, p. 1147. The authors review the available lit-

erature on the subject, which would seem to indicate that the drug is treacherous and that its administration, as has been previously emphasized in The Journal, should invariably be under the control of a physician. As is usual with any drug used for cosmetic purposes, commercial interests have promptly entered the field of exploitation of dinitrophenol. There is not the slightest doubt that vast numbers of people are taking this preparation both with and without the advice of their physicians. Physicians who administer the drug to their patients should inform them thoroughly concerning such dangerous manifestations as increased temperature, severe urticaria and pruritus, and recommend immediate discontinuance of the preparation on the appearance of any symptoms of this character. (Jour. A. M. A., April 7, 1934, p. 1156.)

Bard Parker Formaldehyde Germicide Omitted from N. N. R.—The Council on Pharmacy and Chemistry reports that in 1929 Bard-Parker Formaldehyde Germicide (Parker, White and Heyl, Inc., New York), a mixture of formaldehyde, alcohol, and other undeclared ingredients recommended for use in sterilizing steel surgical instruments and rubber catheters that would be injured by boiling water, was included in the list now designated "List of Articles and Brands Accepted by the Council But Not Described in N. N. R." When the period for which the product was accepted expired, at the close of 1932, the Council informed the manufacturer that the product would be reaccepted (1) provided the firm submitted acceptable evidence that the solution kills vegetative and spore forms of pathogenic bacteria in the crevices, joints and interiors of the types of instruments for which its use as a sterilizing agent was being recommended, (2) provided the firm declared the complete composition of the preparation on the labels and in the advertising, and (3) provided the firm revised its advertising and labels according to the rules and the evidence found to be acceptable.

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